

CHEMICAL ENGINEERING

December
2015

ESSENTIALS FOR THE CPI PROFESSIONAL
www.chemengonline.com

Improving Cost Estimates

From Start to Finish

Point-Level Switches

43rd Kirkpatrick Award
Winner Announced

Combustible Dust Standard

Avoiding Hazop Mistakes

Facts at Your Fingertips:
Water Treatment

Plant Revamps

Focus on Mixers and
Blenders

break through the

NOISE

ECLIPSE®
706GWR

3X
Higher

1.57
Competitor
SNR

4.40
Model 706
SNR

The ECLIPSE Model 706 transmitter has a signal-to-noise ratio nearly **3 times higher** than competitors.

Better Signal-to-Noise Ratio Means Better Level Control Performance

While transmit pulse amplitude (signal size) has helped to make guided wave radar technology the standard for accurate, reliable level measurement, the fact is signal-to-noise ratio (SNR) represents a far more critical indicator of level control performance. For superior SNR in all process conditions, no other GWR device beats the Eclipse® Model 706 transmitter from Magnetrol®.

To learn more about the breakthrough ECLIPSE Model 706 GWR transmitter visit eclipse.magnetrol.com or contact your MAGNETROL representative today.



magnetrol.com • 1-800-624-8765 • eclipse.magnetrol.com

Circle 6 on p. 190 or go to adlinks.chemengonline.com/56204-06

© 2015 Magnetrol International, Incorporated

Cover Story

34 **Part 1: Optimizing the Design-to-Cost Cycle**

By intensifying cooperation among process designers and cost engineers in the conceptual stage of plant projects, better-informed decisions can be made on the economic viability of plant projects

38 **Part 2: Competitive Pricing of Process Plants**

Accurate pricing of CPI plants involves integrating technical design with economic evaluation and accounting for many types of risk. Knowledge of costing methods from the perspective of EPCs and owner-operators is critical

In the News

7 **Chementator**

Thermochemical regenerator system demonstrated in glass-production facility; Large-scale production of carbon nanotubes; Continuously cleaned filters for challenging water streams; A new catalyst removes cyanide from wastewater; Bioelectrochemical system treats wastewater and generates biogas; and more

14 **Business News**

Ineos to import ethane to ExxonMobil ethylene plant in Scotland; SNC-Lavalin awarded EPCM contract for potash project in Ethiopia; DuPont opens cellulosic ethanol facility in Iowa; Evonik opens expanded specialty-silica facilities in Japan; and more

16 **Newsfront 43rd Kirkpatrick Award: Winner Announced**

Five companies are honored for innovation in chemical engineering

21 **Newsfront Combustible Dust Standard Gets a Facelift**

While NFPA 652 creates a general set of requirements for mitigating explosion hazards, equipment providers improve offerings to assist with compliance

Technical and Practical

32 **Facts at your Fingertips Water Treatment Technologies**

This one-page reference provides information on the major categories of water contaminants and on pretreatment, primary treatment and posttreatment technologies

33 **Technology Profile Maleic Anhydride from *n*-Butane (Fixed-bed Process)**

This column describes a process for producing maleic anhydride via a fixed-bed process

43 **Feature Report Point-Level Switches for Safety Systems**

Industries that manufacture or store potentially hazardous materials need to employ point-level switches to protect people and the environment from spills



34



38



21



43



54



26



29

48 Engineering Practice Chemical Process Plants: Plan for Revamps Follow this guidance to make the most of engineering upgrades designed to improve plant operations or boost throughput capacity

54 Environmental Manager Common Mistakes When Conducting a HAZOP and How to Avoid Them
An important part of ensuring the success of a HAZOP study is to understand the errors that can cause the team to lose focus

Equipment and Services

26 Focus on Mixers and Blenders
This rotary jet mixer is both compact and efficient; Single-use mixers support pharma and bioprocessing; Heavy-duty mixers are designed for long service life; Automation increases the reliability of fluid mixing; Create gas mixtures with ease to calibrate flowmeters; and more

29 New Products
This tool provides realtime data on refractory wall loss; New waterproofing solutions for demanding applications; Corrosion-resistant warning signals with two horn options; This filter-cart system can now handle smaller particles; Prevent cavitation in control valves with this new trim design; and more

Departments

5 Editor's Page Sharing your expertise
Consider sharing your expertise with colleagues by writing an article for publication in *Chemical Engineering*

192 Economic Indicators

Advertisers

59 CE Buyer's Guide 2016

188 Classified

190 Reader Service

191 Ad Index

Chemical Connections



Follow @ChemEngMag on Twitter



Join the *Chemical Engineering Magazine* LinkedIn Group



Visit us on www.chemengonline.com for Latest News, Webinars, Test your Knowledge Quizzes, Bookshelf and more

Coming in January

Look for: **Feature Reports** on Gas Separation; and Distillation; A **Focus** on Temperature Measurement and Control; A **Facts at your Fingertips** on Process Hazards Analysis; an **Engineering Practice** article on Illumination of Process Vessels; a **Solids Processing** article on Hopper Design; **News Articles** on Modular Construction; and CO₂-Capture Technology; and more

Cover: Rob Hudgins

CONVEY

FLEXI-DISC® Tubular Cable Conveyors gently slide fragile foods and non-foods through smooth stainless steel tubing routed horizontally, vertically or at any angle, over short or long distances, dust-free. Single or multiple inlets and outlets.



DUMP

FLEXICON® Manual Dumping Stations allow dust-free dumping of bulk material from bags and other containers. Automatic reverse-pulse filter cleaning allows continuous, efficient operation. Available with integral bag compactors for total dust containment.



UNLOAD

BULK-OUT® Bulk Bag Dischargers unload free- and non-free-flowing solids from bulk bags automatically. Allows untying, discharging, retying and collapsing of bulk bags—all dust-free. Available with weigh batching controls.



CONDITION

BLOCK-BUSTER® Bulk Bag Conditioners loosen bulk materials that have solidified during storage and shipment. Variable height turntable positions bag for hydraulic rams with contoured conditioning plates to press bag on all sides at all heights.



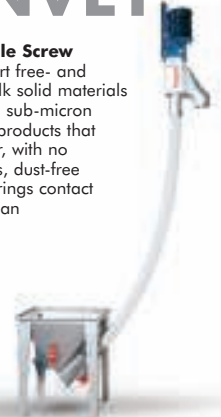
FILL

SWING-DOWN®, REAR-POST and TWIN-CENTERPOST™ Bulk Bag Fillers can fill one bulk bag per week or 20 per hour at the lowest cost per bag. Numerous performance options. Available to industrial or sanitary standards.



CONVEY

FLEXICON® Flexible Screw Conveyors transport free- and non-free-flowing bulk solid materials from large pellets to sub-micron particles, including products that pack, cake or smear, with no separation of blends, dust-free at low cost. No bearings contact material. Easy to clean quickly, thoroughly.



CONVEY

PNEUMATI-CON® Pneumatic Conveying Systems move a broad range of bulk materials over short or long distances, between single or multiple inlet and discharge points in low to high capacities. Available as dilute-phase vacuum or positive pressure systems, fully integrated with your process.



DUMP

TIP-TITE® Container Dumpers dump bulk material from drums (shown), boxes or other containers into vessels up to 10 ft (3m) high. Dust-tight (shown) or open chute models improve efficiency and safety of an age-old task.



SUCCEED

The FLEXICON® Lifetime Performance Guarantee™ assures you of a successful result, whether you purchase one piece of equipment or an engineered, automated plant-wide system. From initial testing in large-scale laboratories, to single-source project management, to after-sale support by a worldwide network of factory experts, you can trust your process—and your reputation—to Flexicon.



USA
sales@flexicon.com
1 888 FLEXICON

CHILE +56 2 2415 1286
UK +44 (0)1227 374710
SPAIN +34 647 670 302
AUSTRALIA +61 (0)7 3879 4180
SINGAPORE +65 6778 9225
SOUTH AFRICA +27 (0)41 453 1871

flexicon®
.com

©2015 Flexicon Corporation. Flexicon Corporation has registrations and pending applications for the trademark FLEXICON throughout the world.
*See full Lifetime Performance Guarantee for details.

Circle 4 on p. 190 or go to adlinks.chemengonline.com/56204-04

GO BIG

or GO HOME!



- ✓ High Flow
- ✓ High Performance
- ✓ Corrosion Resistant
- ✓ Ultra-pure Materials
- ✓ No Wetted Metals
- ✓ **3-Year Guarantee**

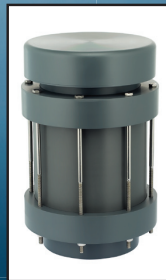
The leading thermoplastic valve designs are now available in heavy duty jumbo pipe sizes...

- Super high performance Pressure Regulators up to 4"
- High capacity Relief & Backpressure Valves up to 3"
- Actuated Ball Valves up to 6"
- Check Valves up to 4"
- Air Release Valves & Vacuum Breakers up to 4"
- Solenoid Valves up to 3"
- Double Wall Sight Glasses up to 8"

...combining high flow characteristics with the ultimate high performance control of **Plast-O-Matic!**

All products are engineered and built in the USA for maximum dependability, longevity and lowest cost of ownership in chemical, ultrapure, and waste/wastewater treatment systems.

- 2-way ball valves up to 6"
- 3-way ball valves up to 4"



Venting Valves & Check Valves to 4"



Relief & Backpressure Valves to 3"



Pressure Regulators to 4"

PLAST-O-MATIC
VALVES, INC.

1384 POMPTON AVENUE, CEDAR GROVE, NEW JERSEY 07009
www.plastomatic.com

Circle 13 on p. 190 or go to adlinks.chemengonline.com/56204-13

PUBLISHER

MICHAEL GROSSMAN
Vice President and Group Publisher
mgrossman@accessintel.com

EDITORS

DOROTHY LOZOWSKI
Editor in Chief
dlozowski@chemengonline.com

GERALD ONDREY (FRANKFURT)
Senior Editor
gondrey@chemengonline.com

SCOTT JENKINS
Senior Editor
sjenkins@chemengonline.com

MARY PAGE BAILEY
Assistant Editor
mbailey@chemengonline.com

AUDIENCE DEVELOPMENT

SARAH GARWOOD
Audience Marketing Director
sgarwood@accessintel.com

JESSICA GRIER
Marketing Manager
jgrier@accessintel.com

GEORGE SEVERINE
Fulfillment Manager
gseverine@accessintel.com

JEN FELLING
List Sales, Statistics (203) 778-8700
j.felling@statistics.com

EDITORIAL ADVISORY BOARD

JOHN CARSON
Jenike & Johanson, Inc.

DAVID DICKEY
MixTech, Inc.

MUKESH DOBLE
IIT Madras, India

HEADQUARTERS

40 Wall Street, 50th floor, New York, NY 10005, U.S.
Tel: 212-621-4900
Fax: 212-621-4694

EUROPEAN EDITORIAL OFFICES

Zeilweg 44, D-60439 Frankfurt am Main, Germany
Tel: 49-69-9573-8296
Fax: 49-69-5700-2484

CIRCULATION REQUESTS:

Tel: 847-564-9290
Fax: 847-564-9453
Fulfillment Manager; P.O. Box 3588,
Northbrook, IL 60065-3588
email: chemeng@omedia.com

ADVERTISING REQUESTS: SEE P. 190

For reprints, licensing and permissions: Wright's Media, 1-877-652-5295,
sales@wrightsmedia.com

ACCESS INTELLIGENCE, LLC

DON PAZOUR
Chief Executive Officer

HEATHER FARLEY
Chief Operating Officer

ED PINEDO
Executive Vice President
& Chief Financial Officer

MACY L. FECTO
Exec. Vice President,
Human Resources & Administration

JENNIFER SCHWARTZ
Senior Vice President & Group Publisher
Aerospace, Energy, Healthcare

ROB PACIOREK
Senior Vice President,
Chief Information Officer

ART & DESIGN

ROB HUDGINS
Graphic Designer
rHUDGINS@accessintel.com

PRODUCTION

JOHN BLAYLOCK-COOKE
Ad Production Manager
jcooke@accessintel.com

INFORMATION SERVICES

CHARLES SANDS
Director of Digital Development
csands@accessintel.com

CONTRIBUTING EDITORS

SUZANNE A. SHELLEY
sshelley@chemengonline.com

CHARLES BUTCHER (U.K.)
cbutcher@chemengonline.com

PAUL S. GRAD (AUSTRALIA)
pgrad@chemengonline.com

TETSUO SATOH (JAPAN)
tsatoh@chemengonline.com

JOY LEPREE (NEW JERSEY)
jlepre@chemengonline.com

GERALD PARKINSON (CALIFORNIA)
gparkinson@chemengonline.com

HENRY KISTER
Fluor Corp.

GERHARD KREYSA (RETIRED)
DECHEMA e.V.

RAM RAMACHANDRAN (RETIRED)
The Linde Group

SYLVIA SIERRA
Senior Vice President,
Customer Acquisition and Retention

ALISON JOHNS
Senior Vice President, Digital Development

MICHAEL KRAUS
VP, Production, Digital Media
& Design

STEVE BARBER
Vice President,
Financial Planning and Internal Audit

GERALD STASKO
Vice President/Corporate Controller

Access Intelligence
9211 Corporate Blvd., 4th Floor
Rockville, MD 20850-3240
www.accessintel.com



Sharing your expertise

Chemical engineers can put their skills to use in a very broad range of areas — from chemical and pharmaceutical manufacturing to petroleum refining and to areas of biomedical work, such as development of artificial dialysis equipment and more. This versatility is, in part, what drew me to study chemical engineering. In the great diversity of jobs that we hold — whether concentrating in plant operations, design, safety, research and development, management, procurement, technical services and many combinations of these jobs — what ties us all together is the discipline of chemical engineering. The basic building blocks that we have learned in heat-and-mass transfer, material balances, separations, reaction kinetics, cost engineering and more, whether in the classroom or on the job, are what chemical engineers have in common.

Building knowledge

With work experience comes practical knowledge of how to apply the basic building blocks of our profession. Engineers gain great on-the-job expertise in the areas in which they work. As most engineers are multi-taskers, holding a wide variety of jobs, sharing that expertise is most beneficial. Experienced engineers can learn about areas that they may not have concentrated in, but need to know about. New graduates can benefit from the practical knowledge they will need as they embark upon their careers.

There are a number of ways to share that expertise, one of which is to write an article for publication. *Chemical Engineering* seeks manuscripts written by experts in the field to serve our readers. If you might be interested in writing such a manuscript, please read on.

What we seek

The main thing we look for in our outside-authored articles is practical information. Our readers want factual information that can be applied to their jobs. Next, our articles should appeal to a relatively wide section of our readers, who as mentioned earlier, are in diverse fields within the chemical process industries (CPI). While specific applications may be useful to illustrate a point, an article should have a broad appeal. These articles should also show no favoritism to specific products or vendors. And, a last point to keep in mind is that the article should not have been published elsewhere.

We cover a wide variety of topics ranging from highly technical areas to professional development. If you have an idea for an article that you think would be a fit for *Chemical Engineering*, we encourage you to contact us (dlozowski@chemengonline.com). Our editors can help with any questions you might have, and help guide you in producing a manuscript for a promising topic.

Inside this issue

Our December issue brings the news of our 2015 Kirkpatrick Award winner and covers the breakthrough technologies of all five finalists in this biennial competition (pp. 16–20). Cost estimating is the subject of our two-part cover story (pp. 36–44) and other highlighted topics in this hefty issue include: point-level switches; process hazard analyses; plant revamps; and of course our annual Buyer's Guide. We hope you enjoy it.

Dorothy Lozowski, Editor in Chief



“It mixes like a PowerMix on steroids!”

The **Ross PDDM Planetary Dual Dispenser** is engineered in the U.S.A. by the company that introduced the original Double Planetary mixer and the PowerMix,* the industry's first hybrid dispenser/planetary mixer.

With independent drive controls, a choice of interchangeable blade designs and US-based support, the PDDM is the world's most versatile tool for mixing battery pastes, adhesives, sealants and other products requiring high-viscosity, multi-stage mixing.

Learn more.

Visit www.planetarydispensers.com

*Patent No. 4,697,929

Mike Morse
Regional Sales Manager
Employee Owner



In the PDDM mixer, planetary and HSD blades rotate on their own axes as they orbit the batch.



Scan to learn more.



Contact Ross today to arrange a no-charge test in our laboratory.

Call 1-800-243-ROSS
Or visit mixers.com

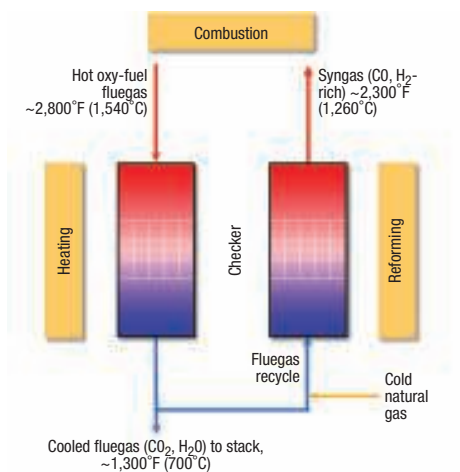


Thermochemical regenerator system demonstrated in glass facility

A patented thermochemical regenerator system developed by Praxair, Inc. (Danbury, Conn.; www.praxair.com) has been demonstrated at its first industrial site, a glass-making facility in Mexico. The system, known as the Optimelt heat-recovery system, lowers fuel consumption in oxy-fuel furnaces, which use pure oxygen, rather than air, as the primary combustion oxidant.

The Optimelt system directs combustion fluegas to a regenerator chamber, where it heats refractory checker bricks and cools to between 1,100 and 1,300°F before exiting the chamber. A portion (10–20%) of the cooled fluegas (mostly H₂O and CO₂) is recycled, mixed with the furnace fuel (natural gas) and then introduced at the bottom of another regenerator that has been heated in the previous cycle, according to the company. The gas mixture absorbs heat from the refractory material, Praxair explains, and undergoes endothermic reactions, such as H₂O- and CO₂-reforming, to generate synthesis gas (syngas). With the gas mixture above a certain temperature, the reactions occur at atmospheric pressure without the need for catalysts or additional steam generation, the company points out.

The hot syngas stream has a heating value that is 1.2–1.3 times that of the natural gas that is fed into the regenerator. Capturing



Praxair

waste heat and introducing the preheated syngas stream into the furnace lowers the net fuel input for the furnace. The ability to upgrade the energy content of the fuel in the regenerator results in potential fuel savings of up to 20%, compared to a conventional oxy-fuel furnace, and up to 30% compared to conventional regenerative air-fired furnaces, Praxair states.

The Optimelt system can be included in new construction or retrofit onto existing glass-melting or steel-heating furnaces.

Large-scale production of carbon nanotubes

Last month, Zeon Corp. (Tokyo, Japan; www.zeon.co.jp) started up the world's first mass-production plant for high-grade carbon nanotubes (CNTs) at its Tokuyama facility in Shunan City, Yamaguchi Prefecture, Japan. The plant produces CNTs with more than 99% purity using the Super Growth (SG) method, which was developed by the National Institute of Advanced Industrial Science and Technology (AIST; Tsukuba City, Japan; www.aist.go.jp), with support of New Energy and Industrial Technology Development Organization (NEDO; Kawasaki, Japan; www.nedo.go.jp).

Zeon has been participating in two NEDO-funded projects from 2006 to 2013 in which Zeon developed the mass-production technology for making CNTs, based on the SG Method that was discovered in 2004 by a team led by Kenji Hata at AIST. Since 2011, Zeon and AIST have been operating a dem-

onstration plant and disseminating technology by providing samples. They succeeded in synthesizing homogeneous SG-CNT on a metallic substrate (500 mm x 200 mm), with a production rate 17,000 times higher than that of the original work by Hata.

The SG-CNT process uses a small amount of water within the vapor phase of the synthesis atmosphere, which remarkably enhances catalytic activity, catalytic life and growth efficiency. The high-purity CNTs can be easily recovered and separated from the substrate without damaging their quality.

CNTs produced with the SG method demonstrate unique properties, such as a high aspect ratio, high purity and highly specific surface area. The NEDO project has already devised potential ways of incorporating CNTs into innovative materials and devices, such as high-performance capacitors, highly functional rubber materials and materials with high thermal conductivity.

Edited by:
Gerald Ondrey

ULTRAFILTRATION

A new ultrafiltration fiber can increase permeability by 35% compared to previous generation fibers for wastewater treatment, according to developer Dow Water & Process Solutions (Midland, Mich.; www.dow.com). The XP Fiber was incorporated into the company's commercial UF modules, where it can operate at up to 40% higher flux while producing the same transmembrane pressure and generate up to 30% less wastewater without sacrificing filtrate water quality, Dow says. The XP Fiber realizes advantages in higher water flux, higher water recovery and reduced energy use because of a unique pore structure that can be carefully controlled in manufacturing, explains Ceddella Beazley, business unit director for filtration at Dow.

ENERGY STORAGE

Latent Heat Storage Pty. Ltd. (Adelaide, Australia; www.latent-heat.com), has won an Australian Federal Government grant to launch its sand-based thermal energy storage system (TESS) onto the international market. TESS is based on the latent heat properties of silicon obtained from sand. Developed in conjunction with the University of Adelaide and Adelaide-based engineering consultancy ammjohn (www.ammjohn.com.au), it stores thermal energy by heating and melting containers full of silicon.

The design concept is inspired by the traditional sand hourglass. A typical set-up is a "cold tank," where sand is initially stored, before flowing into a "hot tank," located directly underneath. The cold tank could take the form of a hollow cylinder, designed to

(Continues on p. 8)

allow the concentrated solar flux to penetrate an empty central cylinder part. By opening a valve, the sand will leave the cold tank and flow through the solar flux, where it will be heated up. The hot sand will then be stored in the hot tank. When required, a heat exchanger will be immersed in the sand, and will produce superheated steam that flows through a turbine to generate electricity.

Latent Heat Storage CEO Jonathan Whalley says the competitive advantage of his company's system is in its flexibility and scalability, making it suited to anything from small-scale (500 kW) applications to large-scale applications in the hundreds of megawatts. Using silicon as the storage medium gives both a high operating temperature (1,400°C) and a high energy density; other TESS systems typically operate at about 800°C, he says. The higher operating temperature of TESS lends it higher efficiency in the conversion to electricity, compared with competing systems.

A commercial prototype is currently under development for completion in early 2016.

REDOX-FLOW BATTERY

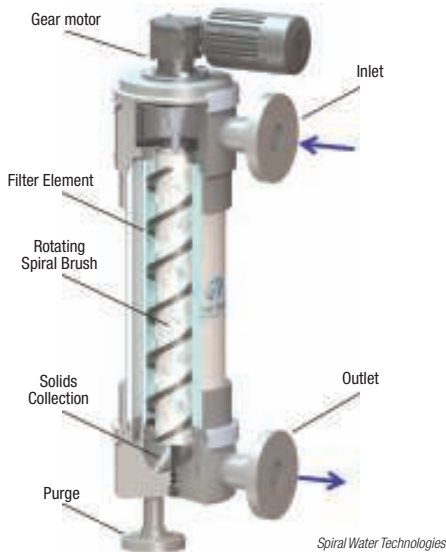
Researchers at the Center for Energy and Environmental Chemistry (CEEC) of the Friedrich Schiller University Jena (Germany; www.uni-jena.de) and university spin-off company, JenaBatteries GmbH (www.jenabatteries.com) are developing a redox-flow battery (RFB) that is based on organic polymers and a harmless saline solution, which makes the system safer and easier to handle than existing RFBs, which use vanadium salts dissolved in sulfuric acid. In the Jena RFB, the polymer's core structure resembles Plexiglas and Styrofoam (polystyrene), but functional groups have been added enabling the material to accept or donate electrons. No aggressive acids are necessary, so it is possible

(Continues on p. 10)

Continuously cleaned filters for challenging water streams

A new self-cleaning filter from Spiral Water Technologies Inc. (San Rafael, Calif.; www.spiralwater.com) can efficiently treat water with 25,000 mg/L total suspended solids (TSS). According to Spiral Water CEO Ashwin Gulati, the filters use much less energy — reportedly just 10% of traditional filters' energy requirements — due to the negligible pressure drop made possible by the filter's automatic, self-cleaning mechanism wherein debris is continuously removed from the filter elements by a motorized spiral brush. Other filters may have pressure drops as high as 30 psi, which can introduce higher energy consumption and may require booster pumps or backwash functionality.

Gulati explains how the filter operates: "Dirty feed water enters at the top, flows down through the distributors, and the spiral brush pushes the dirt down into a purging chamber, which can be automated, while simultaneously moving clean water out."



There is also potential for the motor at the filter's top to be run on solar power, says Gulati. In addition to keeping the filter clean at all times, the fluid dynamics of the movement of dirt into the purge chamber are key in ensuring the filter's effectiveness for treating waters with extremely high TSS levels. The filters can also handle oils and grease, something other filters cannot do, explains Gulati.

Currently, the filters are offered with 15–

50- μ m screens, and the company says that 10- μ m screens will be available soon for even finer filtration. The filters are modular, and can be arranged in parallel to reach a wide range of capacities. They can also be installed into existing systems. In addition to water and wastewater treatment, the filters have recently been employed as a replacement for cartridge filters at a fertilizer plant, for protecting turbine bearings at a hydroelectric facility and for reducing solids in a fruit-juice processing plant.

A new catalyst removes cyanide from wastewater

Chemists at the University of Amsterdam (UvA; the Netherlands; www.uva.nl) have discovered a new catalytic method for removing cyanide ions from industrial wastewater. The heterogeneous catalyst — discovered jointly by Paula Oulego Blanco, Raveendra Shiju and professor Gadi Rothenberg from UvA's Sustainable Chemistry research-priority area — has been shown to reduce CN⁻ concentrations by 90% within minutes from wastewater simulating that produced at steel mills. Higher destruction efficiencies — up to 99.9% — can be achieved, says Rothenberg.

Rothenberg declined to provide more details about the new catalyst, due to a pending patent, except to say it is a simple metallic salt whose "composition and price are such that it can easily be applied to a large-scale process without any economic penalty." The catalyst can be used in either small-scale

batch reactors or large-scale packed-bed continuous reactors.

Initially, the technology transfer is focused on steel-mill effluents, and a project is currently moving to the scaleup phase. Since then, the technology has been tested on the effluent from the precious-metals sector, where the process volumes are smaller, but the CN⁻ concentrations are much higher (up to 10,000 times higher). In a collaboration with Germany's oldest gold and silver refining company, Heimerle + Meule GmbH (Pforzenheim, Germany; www.heimerle-meule.de), tests on such industrial samples have demonstrated a similar 99.9% CN⁻ removal efficiency within minutes, says Rothenberg. Now, Heimerle + Meule is considering the integration of this catalytic process into its wastewater treatment plants, with the goal of developing a new wastewater-treatment technology for the precious metals sector.



When you need **BIG POWER**, total integration generates bigger and better results.

No matter the business — refinery, utility, manufacturing or petrochemical — if you are in an industry that demands big power, you'll want to check out the complete range of boiler systems from Cleaver-Brooks. For more than 80 years, we have set the industry standard in the design and production of boiler systems that continually maximize efficiency and deliver uncompromising reliability and the lowest possible emissions. Our total integration is that every component — from gas inlet to stack outlet — is designed, engineered and manufactured by just one company.

**To find your nearest representative,
visit cleaverbrooks.com or call 800.250.5883.**

to use a simple, low-cost cellulose membrane.

In first tests, the RFB from Jena could withstand up to 10,000 charging cycles without losing a crucial amount of capacity. The energy density of the system — described in a recent issue of *Nature* — is 10 Wh/L. Work is underway to develop larger, more efficient systems that will be marketed by JenaBatteries.

BIO-BASED ISOPRENE

In a joint research project with the National Research and Development Agency Riken (Yokohama, Japan) and Yokohama Rubber Co. (Tokyo, Japan; www.yokohamatire.com), Zeon Corp. (www.zeon.co.jp) has succeeded in synthesizing isoprene from biomass. The three partners have been engaged in joint research for producing synthetic rubbers from biomass since 2013. Using the cell-design and plant-science technologies of the Riken Center for Sustainable Resource Science (CSRS), the researchers discovered a new method for synthesizing isoprene by designing an artificial metabolic pathway using in-silico metabolic design technology — a computer-based technique used for designing the metabolic pathways of a microorganism at the genomic scale. They intend to commercialize the technology by the early 2020s.

ENZYMES BOOSTS PROFITS

Late October, Novozymes (Copenhagen, Denmark; www.novozymes.com) launched Avantec Amp, an advanced enzyme product that is said to boost profits at corn-based ethanol plants. By switching from standard enzyme technology to Avantec Amp, a typical ethanol plant with a capacity of 110 million gallons can make up to \$2.5 million a year in additional net profits, says Novozymes.

Avantec Amp combines multiple enzyme activities into one product, and surpasses competing enzyme solutions by squeezing more ethanol from each kernel of corn and enabling increased output from the ethanol plant, thus saving energy and water and increasing return on invested capital, the company says. It can also boost corn oil production, an increasingly important revenue stream in the industry, by freeing up oil bound in the corn germ. In addition, Avantec Amp reduces the need for a number of chemicals used to control and accelerate production processes at ethanol plants. Urea, which is used

(Continues on p. 12)

Bioelectrochemical system treats wastewater and generates biogas



The first full-scale installation of a unique bioelectrochemical wastewater-treatment system was recently started up at a California brewery. The system, known as the EcoVolt Reactor, was developed by Cambrian Innovation Inc. (Boston, Mass.; www.cambrianinnovation.com). EcoVolt Reactor is a microbial reactor system that eliminates around 90% of biological oxygen demand (BOD) in wastewater while generating methane from the organic carbon.

The EcoVolt Reactor system works by applying a small electric current to an electrochemical cell containing naturally occurring bacteria and archaea species. The applied current activates metabolic reaction pathways that would not be possible in normal anaerobic microbial respiration. The anaerobic microbes are grown on a fixed film that is designed for enhanced stability, says Justin Buck, co-founder and chief technology officer at Cambrian. The system is related to a microbial fuel cell, Buck explains, but instead of generating a current from the biological redox reactions, a small current is added to stimulate desired anaerobic respiration pathways and products. The

current also provides continuous feedback in real time, allowing the system to monitor itself.

The initial EcoVolt Reactor installation treats high-BOD spent brewery water at a California craft beer facility, producing enough biogas to generate 130 kW of renewable electricity and 45,000 therms of heat per year in a combined heat and power (CHP) system. Downstream polishing units (EcoVolt MBRs — aerobic membrane bioreactors) remove the remaining BOD and trace solids, producing clear, reusable water (80,000 gal/d). The EcoVolt system allows the brewery to cut its water footprint by 40% while producing more than 20% of its energy demand.

The EcoVolt Reactors are modular, railcar-sized units that are road-transportable and fully automated, so capacity can be expanded by adding units, Buck says. Cambrian is looking for its first applications in the beer and wine-making space because the wastewater from those processes disrupts municipal water treatment systems and comes with significant expense to producers, Buck says. It may expand to other applications in the future.

High-efficiency cell removal

Acoustic wave separation (AWS) technology can improve cell-culture clarification in biopharmaceutical applications by enabling high-efficiency, continuous removal of cells in a closed system without centrifugation. Developed by FloDesign Sonics (Wilbraham, Mass.; www.flodesign.org) and licensed to Pall Corp. (Port Washington, N.Y.; www.pall.com), the AWS technology works by applying acoustic forces across a flow channel

to generate a three-dimensional standing wave. When a cell culture passes through the flow channel, the cells are trapped at the nodes of the acoustic waves, and they aggregate and precipitate as their buoyancy decreases. AWS is capable of removing cells without any temperature increases or physical damage to the cells or proteins, Pall says. The technology can be used with Pall's continuous bioprocessing and single-use products.



We can do more than just level: Pressure measurement with cutting-edge technology!

Pressure measuring instruments for all media

Whether process, hydrostatic or differential pressure: VEGABAR series 80 pressure transmitters measure reliably in all liquids, gases and vapours.

- Transmitter ranges from 25 mbar to 1,000 bar
- Every sensor can be converted to an electronic differential pressure system
- Front-flush installation even with abrasive media
- Gas-tight thanks to encapsulated process module (Second Line of Defense)



www.vega.com/vegabar80

Looking Forward

VEGA

Circle 19 on p. 190 or go to adlinks.chemengonline.com/56204-19

to improve the fermentation of ethanol, can be cut by more than 70%. Surfactants and ammonia, used to extract corn oil and adjust pH levels, can also be significantly reduced, says Novozymes.

DESALINATION

Reduced fouling and lower energy consumption are the promising potential benefits of a new approach to desalination, which is being developed by researchers at the Massachusetts Institute of Technology (MIT; Cambridge, Mass.; www.mit.edu). Unlike traditional desalination systems that use the barrier properties of membranes to selectively remove water from brackish solutions, MIT's approach uses an electrically driven shockwave to physically separate salty and fresh water.

In shock electro dialysis, water flows through a porous glass frit that is sandwiched between membrane electrodes. When an electric current flows through the system, the salty water migrates into regions where the salt concentration is either depleted or enriched. When that current is increased to a certain point, it generates a shockwave between these two zones, sharply dividing the streams and allowing the fresh and salty regions to be separated by a simple physical barrier at the center of the flow.

The research — described in a recent issue of *Environmental Science and Technology Letters* — has been demonstrated at the laboratory scale, and a theoretical analysis has been performed to explain why the process works.

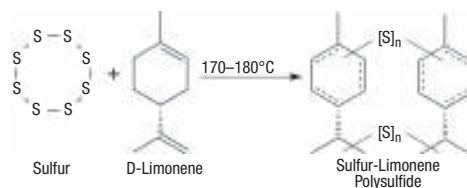
CO-BASED CATALYST

A homogeneous cobalt-based hydrogenation catalyst that converts esters and carboxylic acids to alcohols under mild conditions (100°C, 80 bars H₂) has been reported by chemists from the University of Amsterdam (UvA; the Netherlands; www.uva.nl). The catalyst — consisting of Co(BF₄)₂·6H₂O paired with a "TriPhos" tridentate phosphine ligand — is said to outperform existing precious-metal-based catalysts. The catalyst was developed by professor Bas de Bruin and colleagues at UvA's Van't Hoff Institute for Molecular Sciences. The research — described in an October issue of *Science* — was performed in cooperation with DSM Innovative Synthesis (Geleen, the Netherlands) in a project called CatchBio.

Making a mercury-removing polymer from industrial waste

Scientists at Flinders University (Adelaide, Australia; www.flinders.edu.au) have synthesized a new polymer that is extremely effective at binding to mercury for removal from water and soil. The new material — called sulfur-limonene polysulfide — is created from a reaction (diagram) between sulfur and limonene, two highly abundant byproducts from the petroleum refining and citrus industries, respectively. In addition to the very inexpensive raw materials, the simplicity of the synthesis reaction is another benefit — limonene is added to molten sulfur at around 170–180°C, and no catalysts or solvents are required.

The team is currently producing sulfur-limonene polysulfide in 0.5-kg batches in its laboratory and working to scale up the process. "I anticipate that it is feasible to make several kilograms in a single batch," says lead researcher Justin Chalker. "There are other adsorbents that are as effective at binding mercury. However, these competing technologies are far too expensive and complicated to synthesize on the scale required for typical remediation efforts,"



explains Chalker.

Commercial interest in the polymer has been rising, and the team is currently working with partners in the geoscience and mining sectors, as well as environmental agencies, to assess the new material's performance in remediation efforts. According to Chalker, the most likely application for sulfur-limonene polysulfide is using the polymer as a coating on a high-surface-area mesh that is placed in contaminated water, or as a component of a filtration device. For longterm use, the team envisions that the mercury-bound polymer could be integrated into existing mercury stabilization and storage processes, and there is ongoing work to determine a method to recover bound metals and recycle the polymer. The team is also exploring the use of sulfur-limonene polysulfide in the removal of mercury from air.

This 'ultrabattery' makes its commercial debut

Ecoult Energy Storage Solutions (Sydney, Australia; www.ecoult.com) is entering the commercial and residential energy-storage markets with an "ultrabattery," which was developed by CSIRO (www.csiro.au), with contributions from Furukawa Battery Co. (Yokohama, Japan; www.furukawadenchi.co.jp) and funding from the Australian and Japanese governments.

The ultrabattery combines a lead-acid battery with a supercapacitor in a single cell with a common sulfuric-acid electrolyte. It has a single positive electrode and a twin negative electrode — one part carbon, one part lead. The carbon is the electrode of the capacitor and lead is the electrode of the lead-acid cell. The positive electrode (lead oxide) is common to the lead acid cell and the supercapacitor. The supercapacitor acts to limit the formation of lead sulfate crystals, which tend to impede electrolyte transfer. This enables the battery to operate over long periods in a partial-state-of-charge condition. A conventional lead-acid battery tends to

deteriorate quickly when operated in this partial-state-of-charge condition. The supercapacitor features of the ultrabattery make it especially suitable for handling constant cycling and fast charging and discharging applications, such as renewable smoothing, grid regulation, electric and hybrid-electric vehicles.

Ecoult, which was acquired by East Penn Manufacturing Co. (Lyon Station, Pa.; www.eastpenmanufacturing.com) in 2010, is now marketing the Ultraflex 48 V energy storage range with more than 11 kWh of storage and 25 kW of peak power. The ultrabattery's operation has already been successfully demonstrated on King Island, Tasmania, Australia, by Hydro Tasmania to store energy from wind and solar to reduce diesel consumption. It is also providing frequency control and backup power in grid-scale installations in the U.S. The new 25-kW battery has also been installed in five locations in Australia, to reduce diesel consumption, and as backup power and for solar smoothing. ■

INGENIOUS INDUSTRIAL PUMP SOLUTIONS. CREATED FROM HEART POWER

We work with **HEART, MIND** and **BODY**, because we are **PEOPLE**
PEOPLE serving **PEOPLE**, with **PASSION, INTELLIGENCE** and **COMMITTMENT**
that's why we are able to offer **SOLUTION PACKAGES, NOT JUST PUMPS**

- ✓ Design for excellence
- ✓ Personalized guidance in the pump selection process
- ✓ Fast response and delivery
- ✓ Long term after market support
- ✓ Trained service and spare parts available worldwide



pompetravaini
Committed to stay ahead

www.pompetravaini.it



Pompetravaini Spa Via per Turbigo, 44 • 20022 Castano Primo (Mi) • Tel. +39.0331.889000 • Fax +39.0331.889057
vendite@pompetravaini.it • www.pompetravaini.it

Circle 14 on p. 190 or go to adlinks.chemengonline.com/56204-14

LINEUP

AXENS
BADLANDS
BASF
DOW
DUPONT
EQUATE
EVONIK
EXXONMOBIL
FLUOR
GEVO
HONEYWELL
INEOS
KBR
mitsui
OXITENO
PRAJ
SHELL
SIGMA-ALDRICH
SNC-LAVALIN
SOLENIS
TOTAL
UNIVATION
VERSALIS
WILLIAMS
YARA

Plant Watch

Ineos to import ethane to ExxonMobil ethylene plant in Scotland

November 10, 2015 — Ineos (Rolle, Switzerland; www.ineos.com) will supply ethane from its new import terminal in Grangemouth, Scotland from U.S. shale gas for the ExxonMobil-owned Fife Ethylene Plant (FEP) located at the Mossmorran site in Scotland. FEP has a production capacity of 830,000 metric tons per year (m.t./yr) of ethylene.

SNC-Lavalin awarded EPCM contract for potash project in Ethiopia

November 9, 2015 — SNC-Lavalin (Montreal, Canada; www.snclavalin.com) has been awarded an engineering, procurement and construction management (EPCM) contract by Yara International ASA (Oslo, Norway; www.yara.com), for a new potash mining and processing facility located in the Dallol region of Ethiopia. The facility will include a process plant designed for the production of 600,000 m.t./yr of sulfate of potash.

Fluor completes Shell's Quest carbon-capture project in Alberta

November 6, 2015 — Fluor Corp. (Irving, Tex.; www.fluor.com) has completed the construction of Shell's Quest carbon capture and storage (CCS) project near Fort Saskatchewan, Alberta, Canada. The Quest CCS project will capture approximately 1 million m.t./yr of carbon dioxide.

Oxitenno announces a new alkoxylation unit in Texas

November 5, 2015 — Oxitenno (São Paulo, Brazil; www.oxiteno.com) is constructing a new alkoxylation unit in Texas, with an estimated investment of \$113 million. The plant should start operating in late 2017, and will have a capacity of around 170,000 m.t./yr.

BASF starts up production plant for specialty amines in Ludwigshafen

November 5, 2015 — BASF SE (Ludwigshafen, Germany; www.basf.com) has started up a plant for the production of specialty amines. The plant can manufacture approximately 12,000 m.t./yr of a product range of about 15 amines.

Williams moves forward on Alberta propane-dehydrogenation facility

November 3, 2015 — The Williams Companies, Inc. (co.williams.com; Tulsa, Okla.) has advanced to the next phase of development of a planned propane-dehydrogenation facility located near Edmonton, Alberta, Canada. The plant will have a production capacity of 525,000 m.t./yr of polymer-grade propylene.

DuPont opens cellulosic ethanol facility in Iowa

October 30, 2015 — DuPont (Wilmington, Del.; www.dupont.com) opened a new cellulosic biofuel facility in Nevada, Iowa, said to be the world's largest cellulosic ethanol plant. The plant has a capacity to produce 30 million gal/yr of biofuels from corn stover feedstock.

Evonik opens expanded specialty-silica facilities in Japan

October 29, 2015 — Evonik Industries AG (Essen, Germany; www.evonik.com) has opened its expanded facilities in Ako, Japan, where the company will produce specialty silicas. The investment represents a roughly 50% increase in Evonik's Japanese production capacity for specialty silicas.

Total to use Axens process technology at La Mède biorefinery

October 21, 2015 — Total S.A. (Paris; www.total.com) has selected Axens' (Rueil-Malmaison, France; www.axens.net) process technology, Vegan, for its first biorefinery, to be located at La Mède (France). The plant will produce 500,000 m.t./yr of paraffinic biodiesel.

Badlands licenses four PE reactor lines using Univation process technology

October 20, 2015 — Badlands NGLs, LLC (Denver, Colo.; www.badlandsnlgs.com) has licensed Univation Technologies' (Houston; www.univation.com) Unipol PE process for four polyethylene (PE) reactor lines. The capacity is to be split between two North American sites, each with two 600,000-m.t./yr PE reactor lines.

Mergers & Acquisitions

Solenis announces acquisition in Brazil to broaden its bioethanol portfolio

November 10, 2015 — Solenis (Wilmington, Del.; www.solenis.com) has signed a definitive agreement to purchase 100% of the shares of Quimatec Produtos Quimicos Ltda. (www.quimatec.com.br) and Locatec de Araraquara Ltda-Me, both located in Brazil. The transaction is expected to close by year-end. Quimatec is a leader in Brazil's sugar-to-ethanol industry.

Gevo enters licensing agreement with Praj for renewable isobutanol technology

November 10, 2015 — Gevo, Inc. (Englewood, Colo.; www.gevo.com) has entered into a license and joint-development agreement with Praj Industries Ltd. (Pune, India; www.praj.net) to enable the licensing of Gevo's isobutanol technology to processors of non-corn-based sugars. Gevo and Praj expect to license up to 250 million gal of biobutanol capacity over the next 10 yr under this partnership.



Look for more latest news on chemengonline.com

Versalis and KBR sign agreement for styrenics technology licensing

November 4, 2015 — Versalis (Eni S.p.A.; Rome, Italy; www.eni.com) and KBR, Inc. (Houston; www.kbr.com) have entered into a cooperation agreement for KBR to license and provide engineering support for Versalis' proprietary ethylbenzene and styrene monomer technologies.

DuPont to merge packaging and performance polymers businesses

November 3, 2015 — DuPont has announced the merging of its Packaging & Industrial Polymers business with its Performance Polymers business. The consolidation will be effective on Jan. 1, 2016.

Shell announces downstream divestments in France and China

November 2, 2015 — Royal Dutch Shell plc (The Hague, the Netherlands; www.shell.com) completed two divestments from its global downstream portfolio. In France, the company has completed the sale of its Butagaz LPG business to DCC Energy for €464 million. Separately,

Shell has also sold its 75% interest in Tongyi Lubricants in China to Huo's Group and The Carlyle Group.

Yara acquires Pilbara ammonia and nitrate assets from Apache

October 29, 2015 — Yara has acquired 100% of the shares in Apache Fertilisers Pty. Ltd., which holds Apache's 49% ownership position in Yara Pilbara Holdings Pty. Ltd. (YPHL), for \$391 million. YPHL owns the Yara Pilbara ammonia plant, which has a production capacity of around 850,000 m.t./yr.

Mitsui to sell stake in Brazil-based bioethanol business to Dow

October 28, 2015 — Mitsui & Co. (Tokyo; www.mitsui.com) will sell its 50% stake in the Brazil-based company, Santa Vitória Açúcar e Alcool Ltda (SVAA), to The Dow Chemical Company (Dow; Midland, Mich.; www.dow.com) for approximately \$200 million. The transaction is expected to be completed by July 2016. SVAA is involved mainly in sugarcane-based biomass operations, including the production and sales of bioethanol.

Equate to acquire MEGlobal under Dow restructure

October 23, 2015 — Under recently announced restructuring plans by Dow, Equate will acquire MEGlobal, a joint venture (JV) between Dow and Petrochemical Industries Co. (PIC) of Kuwait, for a total equity consideration of \$3.2 billion. MEGlobal is a manufacturer of monoethylene glycol and diethylene glycol, with headquarters in Dubai. This acquisition is expected to close by year-end 2015

Honeywell acquires Sigma-Aldrich research chemicals business

October 21, 2015 — Honeywell (Morristown, N.J.; www.honeywell.com) has signed a definitive agreement to acquire the Seelze, Germany-based laboratory research chemicals business of Sigma-Aldrich (St. Louis, Mo.; www.sigma-aldrich.com) for approximately €105 million. The acquired Sigma-Aldrich business develops and manufactures high-purity research chemicals and other materials used in laboratory applications. ■

Mary Page Bailey

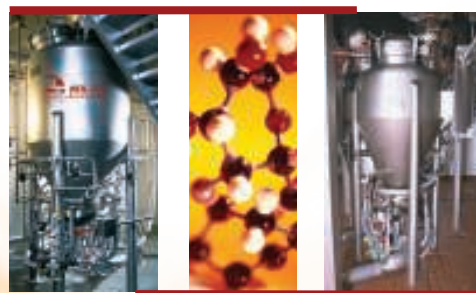
Reliable. Robust. Precise.

We know what it takes to move chemical compounds.



With over 30 years of industry experience, Nol-Tec understands the demands of chemical processing. We offer you:

- Precise measurements, rigorous materials separation, and fail-safe reliability through custom systems designed for your specific needs
- Dense and dilute phase and vacuum pressure conveying, for handling materials of any kind
- Reliable automated operation and control, for optimal performance and consistent costs
- Air Assist™ technology to keep materials — and your processes — flowing
- Service throughout the life cycle of your system



**Nol-Tec Systems —
your partner in handling success**



sales@nol-tec.com



www.nol-tec.com

Call 651-780-8600 today to see how we can meet your toughest material handling challenges.

43rd Kirkpatrick Award: Winner Announced

Five companies are honored for innovation in chemical engineering

IN BRIEF

DOW'S WINNING ACHIEVEMENT

HONOR AWARDS:

AM TECHNOLOGY

CB&I

CLARIANT

NEWLIGHT TECHNOLOGIES

Last month at the Chem Show (New York, N.Y.; November 17–19), *Chemical Engineering* (CE) had the pleasure of honoring this year's finalists and the winner of the 2015 Kirkpatrick Chemical Engineering Achievement Award — a biennial prize that the magazine has bestowed continuously since 1933. The award recognizes the most noteworthy chemical engineering technology commercialized anywhere in the world during 2013 or 2014. (For more information about the award, see CE, January 2015, p. 5).

CE presented the top prize of the 43rd Kirkpatrick Chemical Engineering Achievement Award to Dow Performance Plastics, a division of The Dow Chemical Company (Midland, Mich. www.dow.com) for its Intune Olefin Block Copolymers (OBCs). Honor awards were also presented to: AM Technology (Runcorn, U.K.; www.amtechuk.com) for its Coflore reactor; CB&I (The Woodlands, Tex.; www.cbi.com) for its CDAlky alkylation technology; Clariant (Muttenz, Switzerland; www.clariant.com) for its HGM technology for propylene dehydrogenation (PDH); and Newlight Technologies (Irvine, Calif.; www.newlight.com) for its AirCarbon Process.

DOW'S WINNING ACHIEVEMENT Intune OBC technology

The properties of polyethylene (PE) and polypropylene (PP) are quite different. Whereas PE and its copolymers have properties such as toughness, durability, moisture barrier, solvent resistance and ease of fabrication, PP and its copolymers have properties such as clarity, stiffness, environmental stress-

crack resistance and high service temperature. But because melts of PE and PP are immiscible, it has not been possible to blend the two polymers to mix their

properties. This problem is now solved with Dow's Intune OBC technology.

The development of catalytic chain-shuttling polymerization made possible the synthesis of Intune OBCs in existing commercial polyolefin continuous solution reactors. These systems use parts-per-million (ppm) levels of catalyst at temperatures where polymers remain in solution, even with crystalline segments. Chain-shuttling chemistry gives pseudo-living behavior to coordination polymerization. Dormant chains on a chain transfer agent (typically dipolymeryl zinc) have radically increased lifetimes. A growing polymer can now be transported via convective and diffusive flow within and between reactors and reactor zones having completely different polymerization conditions. This enables production of polyolefin block copolymers of diverse block structure.

Two reaction methodologies have been used to produce OBCs at commercial scale using chain-shuttling polymerization. The first employs two catalysts and a shuttling agent in a single reaction environment. The second methodology uses a single catalyst, a chain-



2015 BOARD OF JUDGES

Venkat R. Bhethanabotla, University of South Florida
 Marc-Olivier Coppens, University College London
 Richard C. Flagan, California Institute of Technology
 Andrzej Górak, TU Dortmund
 Chris Hardacre, Queens University Belfast
 Abraham M. Lenhoff, University of Delaware
 Peter N. Pintauro, Vanderbilt University
 Arvind Varma, Purdue University

shuttling agent, and two different reaction environments with different monomer concentrations (Figure 1).

Dow is the first company to bring OBCs to market, after mastering the engineering required to cost-effectively produce them. Dow commercialized the first OBC based on proprietary chain-shuttling catalysis, Infuse, in 2008. All Dow OBCs build upon the development of homogeneous constrained geometry catalysts that enable unprecedented control over polymer microstructure to yield materials with new properties.

Dow has taken OBCs from academic curiosities to successfully commercialized polymers. Numerous engineering challenges were overcome in matching the kinetics, efficiency, copolymerization behavior, and reversible chain shuttling within controlled reaction environments.

Reaction engineering. To facilitate production by process modeling, a detailed reaction model was created using polymer reaction engineering principles, to relate molecular ar-

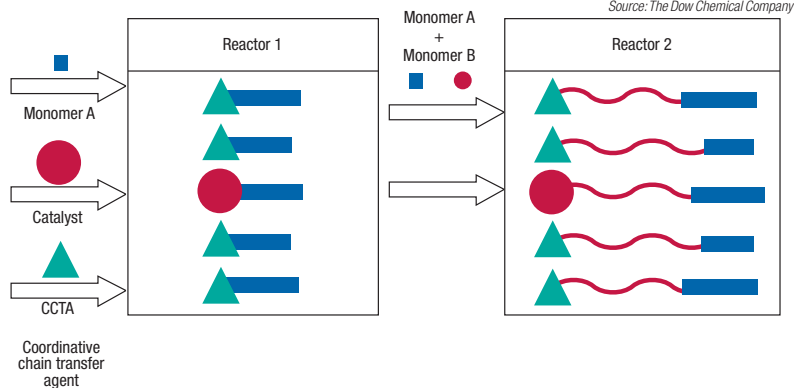


FIGURE 1. Coordinative chain-transfer polymerization uses a single catalyst, a chain-shuttling agent, and two different reaction environments with different monomer concentrations

chitecture and yield to control variables within the reactor system. This entailed specification of a detailed reaction mechanism, construction of population balances for many polymer populations, conversion to moment equations, and finally experimental parameter estimation of unknown rate constants from pilot data and characterization of final product properties. With this model, the company was able to optimize

process conditions to obtain the desired product properties.

Catalyst discovery. Dow used high-throughput methodologies in coordination with science-based evaluation to find the viable catalyst. By using an array of robotically manipulated individual polymerization reactors combined with rapid polymerization-characterization methods, the researchers conducted and evaluated more than 500 individual polymeriza-

855.REDGUARD
redguard.com

LEASEFLEET

SAFETY SUITE

WE PROTECT: DINNER PARTIES
At RedGuard, our blast-resistant buildings provide the proven protection you need to always make the most out of your downtime.

REDGUARD

Circle 15 on p. 190 or go to adlinks.chemengonline.com/56204-15

tions per week — a feat that would have taken several months using conventional techniques, says Dow. Viable candidates were then scaled to pilot facilities.

Polymer characterization. New analytical techniques were developed to quickly determine the molecular structure of the material produced in the reactors. This involved the interactive separation of polyolefins by high-temperature liquid chromatography (HTLC) in combination with other fractionation techniques.

Commercialization. The first commercial sales of development quantities of Intune occurred in March, 2014. Commercial-scale production of Intune began at Dow's Tarragona, Spain polyolefin plant in July 2014. Intune has since been sold into applications as diverse as clear, tough PP storage containers, oriented label films, and in multi-layer barrier films for retort packaging. Dow has many additional application development programs with Intune underway at external customers. The use of Intune block copolymers in polymer blends and applications is protected by an additional 20 U.S. patents and patent applications, in addition to the 25 foundational patents for chain-shuttling catalysis.

HONOR AWARD: AM TECHNOLOGY Coflore reactor

Flow, or continuous reactors have a number of advantages over batch reactors for certain applications, including a reduced size. For mass-transfer-limited reactions, however, good mixing is essential and relying on passive mixing, such as static mixers, can be insufficient. AM Technology has developed a flow reactor based on the same principle used to mix paint in aerosol cans. The mixer element in the Coflore reactor is loose, and mixing is generated by lateral vibration of the reactor body. This eliminates the need for rotating shafts and seals, and delivers better mixing than passively mixed systems.

The standard Coflore ATR system uses 10 reaction tubes that can be connected in series or parallel. The mechanical stirrers in the ATR reverse direction up to 18 times per second, generating short, radial strokes. This

gives fast mixing speeds with high shear rates. Heat transfer performance per unit volume is said to be 1–2 orders of magnitude higher than large batch reactors. Plug flow performance is equivalent to 150 stirred tanks in series at residence time of 55 min in a 3.2-m tube.

The first commercialized ATR system was based on a 22-mm dia. tube and Coflore ATR-1L systems that shipped in 2013. Today there are five systems installed in the U.K., Israel and India. By increasing the tube diameter to 38 mm, a 10-L reactor system has been designed. The ATR-10L is said to provide a predictable and seamless scaleup route, and the first commercial 10-L system was installed at a U.S. site in early 2015.

Due to the confidential nature of the first commercial applications, AM Technology had very little access to chemistry data about the first installed ATR-1L systems. However, the company has performed a number of studies of its own, and, in order to further characterize the performance of the ATR systems, the company built an in-house chemistry facility, with studies initiated in early 2014. The studies to date have focused on mass-transfer-limited processes, because such processes are said to be the most difficult end of the process spectrum, and thus stand to gain the most benefits from flow chemistry, says the company. Results of some studies are summarized in the following:

Enzymatic biotransformations. In a benchmarking study on the esterification of oleic acid to ethyl oleate, using liposome CalB L, the Coflore ATR-1L achieved a conversion of more than 45% compared to less than 9% found in a batch reactor. The reaction was taken to completion in under 2.5 min in the ATR, which was nearly one fifth the time needed by another commercial flow-reactor system.

Gas-liquid enzymatic reaction. The selective oxidation of the D-amino acid flavin adenine dinucleotide (FDA) as a redox cofactor to give a mixture of L-amino acids and the alpha-ketoacid using wild-type D-amino acid oxidase was studied. In stirred batch reactors, the reaction required 24 h to achieve 100% conversion in a 1-L

reactor, and over 30 h in a 4-L reactor. In a 1-L ATR, the reaction went to completion in about 8 h.

Biphasic processes. Two studies with biphasic systems have been undertaken. The first was a reaction with organic liquids and isobutylene gas. The ATR gave an eight-fold increase in reaction rate. The second study was an organic reaction with phosphoric acid catalyst. This gave a 6.6% improvement in yield.

Countercurrent flow (in progress). A liquid-liquid countercurrent extraction study in the ATR demonstrated the feasibility of extracting benzoic acid from water using ethyl acetate. The concentration of benzoic acid in the aqueous phase was reduced from 400 to 3.6 ppm using three tubes.

HONOR AWARD: CB&I CDAlky alkylation technology

Alkylation is a process that converts light olefins (from typical petroleum refinery sources, such as fluid catalytic cracking (FCC) units, or from steam-cracking units) into alkylate — a high-octane component for motor fuels. Until recently, sulfuric acid alkylation was one of the few petroleum-refinery processes that had remained essentially unchanged since its introduction in the 1940s. CB&I's CDAlky process is said to be the first significant advancement in sulfuric acid alkylation to be introduced since then.

Critical in the alkylation reaction is to achieve effective mass-transfer contact between the immiscible acid and hydrocarbon liquid phases. It is also desirable to operate the reaction at low temperatures. Lower reaction temperatures favor the formation of the desired high-octane trimethylpentane product, while minimizing side reactions, such as polymerization, disproportionation, cracking and the formation of unstable esters of sulfuric acid.

The conventional approach uses direct, mechanically agitated contactors for mass transfer between the liquid phases. However, because of the high viscosity of the acid phase, the rotating mixers used in conventional technology are restricted to temperatures no lower than 7–8°C. Power requirements to rotate the im-

pellers at temperatures less than 8°C increase tremendously.

The CDAlky process solves this challenge through the use of a novel contactor that uses a proprietary static internal device to maintain effective mass-transfer contact between the immiscible acid and hydrocarbon liquid phases at substantially lower temperatures than conventional approaches. This ability to operate at temperatures less than 0°C has the benefit of greatly reduced acid-consumption rates due to the suppression of the side reactions.

The contactor design with its static internals also optimizes the acid-hydrocarbon droplet-size distribution, which eases the separation of the acid and hydrocarbons downstream of the reactor. This is in contrast to conventional technology where the rotating impellers, with their associated high shear forces, create a tight emulsion with (very small droplet sizes), which is difficult to separate. CDAlky's optimized distribution of droplet sizes eliminates the need for caustic and water washing of the reactor effluent,

required for conventional alkylation processes because of the associated "carryover" problems. With no rotating mixer or caustic and water post-treatment steps, the CDAlky flowsheet is less complex, requires less capital, improves operational reliability and reduces corrosion rates in the downstream product fractionation section, says CB&I.

The CDAlky process was developed at the company's R&D center in Pasadena, Tex., with more than 50,000 h of operation in the demonstration unit and at approximate throughput rates of 3–4 barrels per day (bbl/d) of alkylate. The first commercial CDAlky unit started up in May 2013, in Dongying, China. This 5,000-bbl/d unit has been operating safely and successfully for about 2 years producing alkylate of very high quality, and meeting or exceeding all process guarantees, says CB&I. The RON values for the alkylate product often exceeds 98.

In 2014, two additional CDAlky units started up in China, one with an alkylate capacity of 5,000 bbl/d and

the other with a capacity of 15,000 bbl/d. In addition to these three commercial units currently in operation, one licensed unit is in the basic engineering design stage (15,000 bbl/d), and another in detailed engineering (5,000 bbl/d).

HONOR AWARD: CLARIANT HGM technology for PDH

Dehydration of paraffin is a highly endothermic reaction. Because the reaction is reversible, thermodynamics limit the conversion, so high temperature and low pressure are desirable for shifting the reaction equilibrium toward final products. To achieve a commercially feasible yield of olefin, dehydrogenation processes are usually conducted at high temperatures (550–650°C). However, dehydrogenation at such high temperatures leads to undesirable side reactions, such as thermal cracking of the initial paraffin, hydrocracking and oligomerization of the target olefin, and coke formation.

Coke formation is problematic, as it



The best choice: Fully Compliant & Flexible



✓ API 610 ✓ API 685 ✓ API 674 ✓ API 676 ✓ API 681 ✓ ISO 5199

Finder Pompe S.p.A.
23807 MERATE (LC) - ITALY
Via Bergamo 65
Tel. +39-039-9982.1
Fax +39-039-599267
e-mail: finder@finderpumps.cpm
Internet: www.finderpumps.com

Circle 3 on p. 190 or go to adlinks.chemengonline.com/56204-03



Safety is for life.

T +49 2961 7405-0 | info@rembe.de



© REMBE All rights reserved

Consulting. Engineering. Products. Service.

Gallbergweg 21 | 59929 Brilon, Germany
F +49 2961 50714 | www.rembe.de
REMBE® GmbH Safety+Control

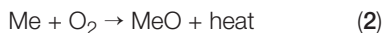
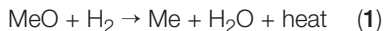
Circle 16 on p. 190 or go to adlinks.chemengonline.com/56204-16

typically blocks the active sites of the dehydrogenation catalyst, thereby reducing its selectivity.

In order to overcome this limitation, Eugene Houdry developed the idea of using coke as a heat source for the dehydrogenation reactions. Since the early 1990s, after Sud-Chemie and later, Clariant purchased the so-called Houdry technologies, the Houdry R&D team has continued to improve the competitiveness and reliability of Catadiene and Catofin catalysts and processes, by working with its exclusive licensing partner, Lummus Technology, now a CB&I business.

In recent years, The Houdry R&D team at Clariant has intensified efforts to solve the challenge of heat balance in dehydrogenation processes. As a result of these efforts, the company "revolutionized" Catofin technology by introducing Heat Generating Materials (HGM) for conducting endothermic reactions. This new concept takes advantage of the cyclic redox operating mode of the initial Houdry technology, and combines it with a heat-production method known as chemical looping combustion.

HGM is a patented combination of metal oxides (MeO) on a proprietary carrier that is loaded into the catalyst bed. HGM is inert towards the feedstock, but undergoes oxidation and reduction in the corresponding stages of the Houdry operating cycle, as shown in the following two reactions:



Reaction (1) takes place during the dehydrogenation step of the cycle, consuming the product H_2 , which shifts the dehydrogenation equilibrium towards more product; and generating heat needed for the dehydrogenation reaction. Reaction (2) takes place during the catalyst-regeneration step, whereby the MeO is also regenerated and more heat released. As a result, this in-situ catalyst-bed heat generation significantly improves efficiency by reducing the dependence on external heat supply from high-temperature air sources required for conventional technologies. The introduction of HGM in the catalyst bed drastically

increases paraffin conversion compared to the use of the dehydrogenation catalyst without HGM under the same operating conditions. Another additional benefit is the increase in olefin selectivity, due to the ability to optimize the temperature profile, and thus paraffin conversion, in the dehydrogenation catalyst bed.

The concept was first commercialized in a Catofin isobutene dehydrogenation plant with less than 10% of the total catalyst weight of HGM. The plant achieved up to 3% improvement in isobutylene selectivity, and did not require fuel gas injection during the first year of operation. Since 2011, several Catofin units have applied HGM for isobutylene production.

A propane dehydrogenation (PDH) plant requires a greater amount of HGM in the catalyst bed. Hence, the concept was redesigned for PDH to incorporate 20% of the total catalyst weight of HGM in the middle of the catalyst bed, and enable 10% lower airflow, 1% better selectivity and 30% longer lifetime.

In 2014, the new design was started up at Ningbo Haiyue New Materials Co., in Ningbo City, China — the first PDH plant to operate using HGM. Following this, Clariant and CB&I are now working on an improved design that will further reduce airflow, increase space velocity and optimize catalyst lifetime, without sacrificing conversion and selectivity.

HONOR AWARD: NEWLIGHT TECHNOLOGIES

AirCarbon Process

Newlight Technologies was founded in 2003 with the aim to produce materials using methane-based greenhouse-gas emissions as a resource. In the past, biocatalysts were self-limiting, meaning that they could only make a certain amount of polymer before they would "turn themselves off" and make CO_2 instead of polymer. One kilogram of sacrificial biocatalyst was required to make one kilogram of plastic.

After ten years of research, Newlight developed a non-self-limiting biocatalyst for the production of polyhydroxyalkanoate (PHA) thermoplastic. To do this, the company developed a pro-

cess to disable the negative feedback receptors on PHA polymerase, the central polymer-production enzyme in the biocatalyst. As a result, instead of self-disabling as polymer is synthesized, the biocatalyst is able to continue to polymerize significantly beyond previous maximum limits and generate nine times more material for the same biocatalyst input than previously. As a result, the number of required unit operations is reduced by a factor of three, which reduces capital costs by a factor of five, says the company. Newlight says it can manufacture thermoplastic polymers from methane for less than the cost to produce plastics from petroleum, without the use of subsidies or carbon pricing.

Newlight's AirCarbon process takes place in a single tank, in which air and methane-based carbon emissions are reacted with Newlight's biocatalyst at ambient temperature and pressure.

In August 2013, Newlight achieved a key commercialization milestone, with the scaleup of its AirCarbon production technology to commercial scale at a four-story, multi-acre site in California. The plant uses air and biogas as the only feedstocks in a single-step ambient conversion reactor, with a multi-million pound per year nameplate production capacity. Since the scaleup, the company has expanded significantly, growing from 5 to over 80 product applications, with AirCarbon being used to make films, furniture, cell-phone cases, caps, containers, automotive component and bottles. In all applications, the AirCarbon is replacing various grades of polypropylene, polyethylene and thermoplastic elastomers.

In July, Newlight signed a contract with Vinmar International Ltd. (Houston; www.vinmar.com) whereby Newlight will supply 19 billion pounds of AirCarbon PHA over 20 years. The Vinmar contract provides for the sale of 100% of AirCarbon PHA from Newlight's planned 50-million lb/yr production facility for 20 years, 100% of the output from a 300-million lb/yr AirCarbon production facility and a 600 million pound per year AirCarbon production facility. ■

Gerald Ondrey

Combustible Dust Standard Gets a Facelift

While NFPA 652 creates a general set of requirements for mitigating explosion hazards, equipment providers improve offerings to assist with compliance

The National Fire Protection Association (NFPA; Washington, D.C.; www.nfpa.org) recently released the first edition of NFPA 652 Standard on Fundamentals of Combustible Dust, which provides the general requirements for the mitigation of fire and explosion hazards associated with combustible dust particulate solids across all industries and processes. What's unique about this iteration is that it cross-references existing NFPA combustible dust standards for additional requirements related to specific industries and equipment. "This standard really calls together the intent of all the other NFPA standards into one document," says member of NFPA 68 & 69 Committees Geof Brazier, who is chairman with BS&B Pressure Safety Management, LLC (Tulsa, Okla.; www.bsbsystems.com). "It's a great starting point for someone tackling explosion issues because it shows, very clearly, the safety strategies and options available for different kinds of process equipment."

In addition, a number of new requirements were introduced that were not previously found in existing industry- or equipment-specific standards. Among the most significant is the requirement to perform a dust hazard analysis (DHA) in all operations that generate, process, handle or store potentially combustible dust particulate solids. The standard allows existing facilities three years to phase in the DHA and makes the facility owner responsible for determining whether materials are combustible or explosive and characterizing their properties to support the DHA.

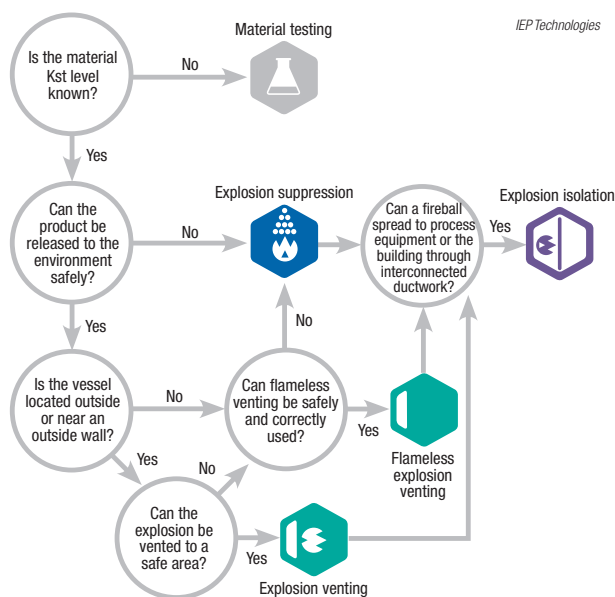


FIGURE 1. A customized explosion protection approach should be based upon each application. The pros and cons for each type of system should be considered

IN BRIEF

- PERFORMING A DHA
- DEALING WITH THE CHALLENGES
- OVERCOMING FALSE ALARMS
- MINIMIZING COST OF OWNERSHIP
- PASSIVE ISOLATION SYSTEMS
- VENTING FOR HYBRID & METAL DUSTS

Performing a DHA

"The first step in performing a DHA is determining whether a dust is combustible and, if it is, how combustible it is," explains Brazier. "The DHA requires processors to understand the combustibility characteristics of the dust they are processing."

This is where the importance of material testing surfaces. "In order to meet the standards for both the DHA and provide proper equipment, it is essential to have dusts tested by an accredited laboratory," says David Grandaw, vice president of sales with IEP Technologies (Winfield, Ill.; www.ieptechnologies.com). "This will determine if the dust is explosive, how explosive and how rapidly the pressure rises, which tells providers of explosion protection equipment how much time the system will have to react to an explosion (a lower rate of pressure equals more time to

EXPLOSION PROTECTION SYSTEMS: 101*

An explosion-suppression system consists of three components: a detector, a control unit and suppressor. If an ignition occurs, the fireball expands from the ignition kernel with the pressure wave (created by the increase in temperature), traveling ahead of the flame front. Explosion pressure detectors are configured to respond to the characteristic pressure increase within milliseconds.

The control unit receives the detection signal from the pressure sensors and sends a release signal to the explosion suppressor. Suppressant is injected into the protected vessel, which rapidly cools the fireball, mitigating further combustion and reducing the explosion pressure.

Chemical explosion suppression systems are referred to as active systems.

Explosion venting, which is referred to as passive protection, incorporates a panel or membrane into the process plant equipment, which opens if there is overpressure from an explosion and releases it into the atmosphere. Since the goal of explosion venting is to release the explosion overpressure before the process vessel is damaged, burnt and unburnt dusts and vapors are released through the vent opening. The ejected fireball must be released into a safe area. Options, such as flameless venting, also exist for areas where venting outdoors is not possible.

Since venting only relieves the deflagration pressures from the vented process vessel, post-explosion fires may occur. Appropriate fire control measures should be incorporated into the process-plant safety design. In addition, explosion propagation through connected ductwork is likely so explosion isolation is required.

Explosion isolation systems are designed to detect an explosion in a process vessel and create a barrier that reduces the risk of the flame/explosion propagation to interconnected equipment. Explosion isolation is a proven method of reducing the risk of enhanced explosions.

Explosion isolation can be applied to vessels that are protected by containment, suppression or venting systems. There are three basic types of explosion-isolation systems:

- Chemical isolation, which discharges an explosion suppressant into the ductwork that will suppress the propagating flame front
- Active mechanical isolation, which triggers the release of a high-speed valve to form a mechanical barrier in the pipeline
- Passive mechanical isolation, which is an in-duct valve that closes as a reaction to the explosion pressure wave and can be used for isolation of interconnected ducts. Additional controls or sensors are not usually needed

* Courtesy of IEP Technologies

react; a higher rate of pressure equals less time to react). We need to know how aggressively a dust will combust and explode to properly prevent that from happening.”

Many providers of explosion protection equipment offer materials testing services and urge processors not to overlook this step. “Often processors are reluctant to test their dust. They think it’s acceptable to use a value out of a book, but, in reality, not all dusts are the same,” says Bob Korn, director of sales for industrial products with Fike (Blue Springs, Mo.; www.fike.com). “Often there are hybrid dusts generated by a process that might be processing different types of dust at different times. These hybrid dusts can be a challenge.”

Brazier agrees: “Hybrid dusts, in particular, can become complicated because the combustion characteristics are difficult to predict. You can’t assume and make protection

decisions based upon information about the individual dust components, because the actual behavior of the hybrid mixture could be very different than what is expected of any of the components.” For this reason, he says it’s important to get specific data regarding the combustion characteristics from an accredited testing facility and then to use that information when performing a DHA. In turn, dust-combustion testing results and reliable sources of more common material-combustion data are considered when reviewing the process to determine where hazards exist in an effort to meet the NFPA 652 requirements, and those of other applicable, industry-specific NFPA standards.

Dealing with the challenges

The next step toward compliance is to work with a company — usually a consultant, an engineering firm or an equipment provider — that can engi-

neer a customized explosion protection solution for each part of the process where a hazard exists (Figure 1). The pros and cons of each type of system — passive (venting) or active (chemical suppression) — should be evaluated for each situation. Often, a facility will end up with a mixture of the two technologies (for information on the available technologies see box “Explosion Protection Systems: 101” on p. 23).

“Although today’s explosion protection and suppression technology has not changed much, the industry is embracing new delivery and detection technologies that are more sophisticated and better able to help processors overcome challenges they commonly face when safeguarding facilities, people and products from fire and explosion,” says Korn.

Overcoming false alarms

One of the most common challenges associated with active chemical suppression systems is the potential for false alarms, which trigger the system to unnecessarily release suppressant, often ruining product and slowing down production during clean up.

Most suppression systems rely upon pressure detectors to alert the system to the changes in pressure typically associated with an oncoming explosion and then inject dry chemical into the protected area to suppress the fireball and explosion, says IEP’s Grandaw. This technology, he says, was based upon a pre-determined setpoint and was sometimes responsible for false alarms.

IEP Technologies now offers a dynamic explosion detector as a component on its chemical-suppression systems to avoid this type of false alarm. The MEX-3 Dynamic Explosion Detector uses “rate-of-pressure rise” to differentiate between an actual explosion and slow process pressure excursions (Figure 2). The detector is programmable to accommodate a range of hazard and process conditions, including vacuum and positive-pressure applications. Typical applications include protection of dust collectors, drying systems, pneumatic conveying systems and reacting vessels. “The value of rate-of-pressure rise detection can be seen where you have a process



FIGURE 2. IEP's MEX-3 Dynamic Explosion Detector uses "rate-of-pressure rise" to differentiate between an actual explosion and slow process pressure excursions

with varying operating pressures," says Grandaw. "For example, a dust collector might have pulse-jet technology with varying pressure cycles. A dynamic explosion detector can help filter out false trips and provide immunity to false discharges."

Minimizing cost of ownership

Suppression systems are sometimes associated with a higher cost of ownership because NFPA and other standards require frequent inspection. Also, when a suppression system is triggered, there is usually



FIGURE 3. BS&B's System V chemical suppression system consists of a sensor and a modular "cannon" comprised of five major components: the cannon body, extinguishing agent canister, actuation mechanism, pressurized nitrogen tank (which is initially shipped unpressurized) and the cannon's electrical enclosure

downtime associated with waiting for a service technician to replace parts and reset the system.

BS&B's System V (Figure 3) chemical suppression system helps overcome this challenge. The system consists of a sensor and a modular "cannon" comprised of five major components: the cannon body, extinguishing agent canister, actuation mechanism, pressurized nitrogen tank (which is initially shipped unpressurized) and the cannon's electrical enclosure. "The key to the reduced cost of ownership is

in having a design where the extinguishing agent and the nitrogen gas used as an energy source are separate from each other," says Brazier. "This makes the system user friendly and simplifies refit and maintenance. If a facility keeps spare parts on the shelf and has an employee who has been trained to refit the system, he can do so post-activation, saving lost production time and money. And, due to the modular configuration and initially unpressurized canister, it is easily installed."

Ultrapen PTBT1 and 2
Smartphone/Tablet
Compatible Tester

MYRON L COMPANY

Ultrapen PT5
Dissolved Oxygen (DO)

www.myronl.com
760-438-2021

Download on the
App Store

Bluetooth

MADE IN USA

f

MYRON L
COMPANY
Proud Quality Instrumentation
Since 1967

Circle 8 on p. 190 or go to adlinks.chemengonline.com/56204-08

Passive isolation systems

Flap valves, a popular choice in passive isolation systems, operate on the simple premise of using gravity to remain closed when the process isn't running, but are pushed open by airflow when the process is running. If an explosion were to happen, the explosion pressure wave coming backwards through the pipe (backdraft causes backwards motion), causes the flap to close, blocking propagation of the combustion process from spreading. Recently, though, it was determined that the dust associated with a process may collect in the valve and prevent it from remaining closed, so industry started looking for more reliable isolation valve technology.

Fike recently introduced its ValvEx passive isolation valve (Figure 4) to provide more reliable protection. ValvEx consists of a heavy-duty, coated steel body containing a high-strength, formed stainless-steel flap. It has been designed with high efficiency in mind, which means there is minimal dust drop-out and an aerodynamic design. Air flow opens

the flap to allow normal process conveyance conditions. But, when an explosion occurs in the adjacent vessel, the flow reverses, causing the flap to close onto its field-replaceable seal, reliably stopping the explosion pressure and flame propagation. It offers an integrated seal that is field-replaceable and is self re-setting for simplified maintenance.

"We spent a lot of time in CAD and finite element analysis to develop the aerodynamic design and to minimize pressure drop and dust drop throughout these devices to minimize the potential for dust accumulation. We've also added an air-purge system for customers conveying stickier dusts to keep the seal clean and ensure a proper seal in the event the valve is needed," says Fike's Korn.

Venting for hybrid & metal dusts

Hybrid mixtures — dusts that contain dusts plus solvents or gases — are common in the chemical industry, according to Gerd Mayer, president of Rembe, Inc. (Charlotte, N.C.; www.rembe.us). The usual charac-



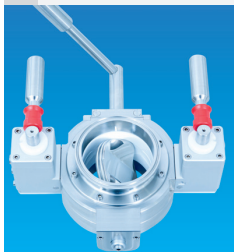
FIGURE 4. Fike's ValvEx consists of a heavy-duty, coated steel body containing a high-strength, formed stainless-steel flap. It has been designed with high efficiency in mind, which means there is minimal dust drop-out and an aerodynamic design

teristics, such as the maximum rate of pressure increase and maximum explosion pressure, do not always accurately reflect the effects of an explosion when it comes to metal and hybrid dusts that may contain solvents or gases. Combustion temperatures and energies also have to be considered and that means that protective systems that take into account the special behavior of these dusts have to be developed.

"Often for hybrid dusts containing solvents or gases and metal dusts,



Transferring potent or toxic substances?



Müller Containment Valve MCV

- Suitable for EEB 5 (OEL < 1 µg/m³)
- Available sizes: DN100, DN150, DN200 and DN250
- Explosion pressure shock resistant up to +10 bar
- Vacuum-tight version down to -1 bar
- Explosion-proof to ATEX for Zone 0/20
- Easy-to-wipe flat surfaces
- AISI 316 L stainless steel, Hastelloy available on request
- GMP-compliant design

Müller GmbH - 79618 Rheinfelden (Germany)
Industrieweg 5 - Phone: +49 (0)7623/969-0 - Fax: +49 (0)7623/969-69
A company of the Müller group
info@mueller-gmbh.com - www.mueller-gmbh.com

Circle 7 on p. 190 or go to adlinks.chemengonline.com/56204-07

PAUL O. ABBE
SINCE 1911

Call the Experts for all your Solids Processing

Vacuum Drying
Rota-Cone & V-Dryers

Solids Mixing
Rota-Cone & V-Blenders
Ribbon & Paddle Mixers
Fluidizing Dual Shaft Mixers
Sigma Mixers & Extruders

Size Reduction
Ball & Ceramic Lined Mills
Jars & Jar Rolling Mills



Manufacturing
Quality
Process Equipment
Since 1911

855-789-9827 | sales@pauloabbe.com

www.pauloabbe.com

Circle 1 on p. 190 or go to adlinks.chemengonline.com/56204-01

you have to have equipment that is approved for these materials," Mayer says. To answer this need, Rembe introduced the ATEX-approved Q-Rohr-3-6T/6T-AL for indoor flameless explosion venting of dusts, gases, hybrid mixtures and metal dusts (Figure 5). Flame gases with temperatures up to 5,432°F arising in the event of a solvent-containing or metal dust explosion are cooled down to a negligible level by means of energy transfer in a stainless steel filter. The leaking gas volume is reduced and the flames are extinguished. At the same time, the increase in pressure and the noise pollution are decreased. The design of the specially developed stainless-steel mesh filter guarantees dust retention and non-penetration of burnt or unburnt dust particles to prevent the risk of a secondary explosion.

"Up until a few years ago processors were most interested in passive technologies because they were under the impression that it was much less costly to purchase, install and own these systems," says Rich Seidel, sales manager with SSI (Breinigsville, Pa.;



FIGURE 5. Rembe's Q-Rohr-3-6T/6T-AL is ATEX-approved for indoor flameless explosion venting of dusts, gases, hybrid mixtures and metal dusts

Rembe

www.suppressionsystems.com). "But, now more businesses are starting to realize that an investment in an active system is often necessary to ensure safety of personnel, process or product and sometimes makes better business sense. For this reason, and due to the improvements in technologies, we are starting to see a greater diversity of de-

ployment techniques. Processors are better at understanding the strengths and weaknesses of each technology and the placement of the right solution in the right place is the current trend. This is important because this is not an industry where a one-size-fits-all approach is suitable."

Joy LePree

PROTECT PUMPS

DRY RUNNING • CAVITATION • BEARING FAILURE • OVERLOAD

MONITOR PUMP POWER

- Best Sensitivity
- Digital Display

TWO ADJUSTABLE SET POINTS

- Relay Outputs
- Adjustable Delay Timers

4-20 MILLIAMPER ANALOG OUTPUT

COMPACT EASY MOUNTING

Only 3.25" x 6.25" x 2"

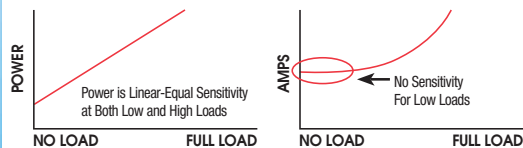
- Starter Door
- Raceway
- Panel
- Wall

UNIQUE RANGE FINDER SENSOR

- Works on Wide-range of Motors
- Simplifies Installation



WHY MONITOR POWER INSTEAD OF JUST AMPS?



PUMP POWER



ALL PRODUCTS
MADE IN USA

LOAD CONTROLS
INCORPORATED
WWW.LOADCONTROLS.COM

CALL NOW FOR YOUR FREE 30-DAY TRIAL 888-600-3247

Circle 5 on p. 190 or go to adlinks.chemengonline.com/56204-05

Mixers and blenders

Alfa Laval



This rotary jet mixer is both compact and efficient

The Rotary Jet Mixer (photo) is equipped with two or four rotary-jet nozzles. When it is positioned below the liquid level in a tank, liquid is withdrawn from the tank outlet by a pump and is circulated via an external loop to the mixer. This design ensures fast and efficient mixing, says the company. A single Rotary Jet Mixer can handle liquid and powder mixing, gas dispersion and tank cleaning (thanks to its clean-in-place capabilities), thereby helping to reduce maintenance efforts, energy use and operating costs. The device combines high blending precision with minimized mixing times, helping to reduce energy consumption by 50% compared to conventional options, according to the manufacturer. It can be used in tanks between 100 and 80,000 L in size. — *Alfa Laval, Richmond, Va.*

www.alfalaval.com



ThermoFisher Scientific Products

Single-use mixers support pharma and bioprocessing

The HyPerforma Single-Use Mixers (photo) are compact mixers that are designed to support large-scale cell-culture production and bioprocessors, from scaleup through Current Good Manufacturing Processes (cGMP). They are fully functional, single-use mixing vessels, featuring sterile contact surfaces for mixing, venting capabilities and temperature sensing. Additional ports allow for aseptic connections for filling, emptying and sampling. Sterile bags are easily loaded through a vertical access door. These mixers feature a patented mixing system that provides conventional overhead mixing while maintaining sterility and integrity, says the company. A three-load-cell weighing system ensures accurate weight monitoring of individual batches. They are designed to provide optimized tubing management, advanced clean-in-place sterilization capabilities, rapid setup, reduced turnaround time, and streamlined

handling of hazardous materials. Six capacity options are available (ranging from 50 to 2,000 L) to address user needs with a small footprint, simplified setup and cleaning, and easy loading of bioprocessing containers. — *ThermoFisher Scientific Products, Waltham, Mass.*

www.thermofisher.com

Vacuum unit carries out both blending and drying

The Vertical Blender/Dryer (photo) is used to carry out vacuum drying in a wide range of applications for materials that are in either a solid or liquid state, such as powders, granules, pellets, fibers, pastes and slurries. It uses a slow-turning auger screw that gently lifts batch materials upward as it orbits around a conical vessel. Materials carried to the top of the batch cascade slowly back down into regions opposite the moving auger screw. The constant exchange of materials between the heated side-walls and the center of the cone-shaped unit both blends and dries the contents. The potential loss of fines (often associated with drying and blending operations) is minimized with this design, says the company, because the blending action is thorough but involves very low impact. During the drying cycle hot water or steam is recirculated through the vessel jacket. A particular benefit of this design is that due to the lower processing temperatures made possible by the vacuum environment, there is a reduced risk of creating hot spots on the vessel walls where the product could become overheated. Available in wide array of sizes (from 1 through 500 ft³), this unit does not require a bottom support bearing to keep the screw steady, so discharge is said to be virtually 100% complete. This design concept also simplifies cleaning and maintenance. — *Charles Ross and Son Co., Hauppauge, N.Y.*

www.mixers.com



Charles Ross and Son

Note: For more information, circle the 3-digit number on p. 190, or use the website designation.

Control the concentration of parts-cleaning fluids



Designed to ensure the right fluid concentration for tool cleaning and cooling systems, the HydroFlow Mechanical Concentrate Mixers (photo) ensure that the concentration of the cleaning solution is neither too lean (which can lead to rust formation and shortened tool life) nor too rich (which will waste costly coolant concentrate, or may negatively affect the cooling ability of the metalworking fluid). Two versions are available. The Drum Top Mixer is a compact venturi mixer for combining water with coolant concentrates. Water jetting through the unit creates a vacuum that siphons concentrate from the supply drum. A needle valve allows for precise adjustments across the desired mixture range. Such models are available in 3-, 10- and 25-gal/min versions. Meanwhile, the company's Proportioner is designed to give users even more control for accurate, automatic mixing. The water-driven, positive-displacement unit dispenses coolant on demand at the desired concentration. Average flow is 5 gal/min. Special units are available for highly alkaline parts-washing fluids. — *Eriez, Erie, Pa.*

www.eriez.com

Magnetic agitator has reliable 'run-dry' capabilities



Classic rotor designs use the motion of an impeller in liquid to create lift, reducing friction with the bearing. With this new design, the impeller now rides on a magnetic field, so the lifting function of the impeller blades is no longer needed, and the shape of

the blades can be optimized for mixing. Designed for pharmaceutical, food-industry and biotechnology applications, this company's Zeta-BMRT magnetic agitators feature a levitated magnetic impeller. Fabricated from magnetic materials, it creates a strong magnetic field, and this magnetic force is used to lift the impeller, reducing friction in the impeller's ceramic bearing, and eliminating the opportunity for potential contamination that can arise when bearing friction may release particles into the liquid. Instead of the traditional, angled blades, the nearly-vertical blades on this agitator help to achieve a shorter mixing time with the same energy input, says the company. Meanwhile, the latest magnetic materials also make it possible to transmit a higher torque to the impeller, allowing an agitator of the same size as before to mix a significantly larger volume of liquid. This agitator is ideal for applications where the user may want to empty the vessel (down to the last drop, says the company), while still keeping the agitator running, says the company. — *Zeta Biopharma, Graz, Austria*

www.zeta.com

This static mixer gets the job done over a short piping length



The Kenics UltraTab static mixer (photo) is designed for applications that have turbulent flow but require a high degree of mixing in a compact space. This static mixer is able to complete blending over a short distance, and ensure low pressure drop through the mixing element. It has an integral wall injector upstream of the mixing element, which forces any flow-stream additives through the high-energy dissipation region created by the mixing element. Low pressure drop through the static mixer reduces pump demand and

PFEIFFER VACUUM



ASM 340

Best in class leak detector, using helium and hydrogen

- Unique capability to detect leaks starting at 100 mbar
- Fastest time to test in its class
- Low maintenance due to rugged design
- User friendly and customizable interface



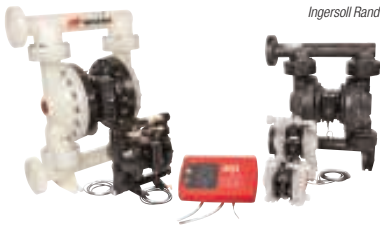
Everything about leak detection

leak-detection.pfeiffer-vacuum.com

Are you looking for a perfect vacuum solution? Please contact us:



Pfeiffer Vacuum GmbH
Headquarters/Germany
T +49 6441 802-0
F +49 6441 802-1202
info@pfeiffer-vacuum.de
www.pfeiffer-vacuum.com



Ingersoll Rand

saves energy. Its compact design and short mixing length helps to minimize pipe lengths, thereby improving the energy of the plant layout, says the company. The UltraTab static mixer is available in size ranges from 2 to 60 in., and it uses NPT or flanged connections. It is available in a broad range of materials, including carbon steel, stainless steel, coated carbon/Type 316 stainless steel, fiberglass-reinforced plastic and high-alloy metals. — *Chemineer, Dayton, Ohio*
www.chemineer.com

Heavy-duty mixers are designed for long service life

The Lightnin Series 80 Medium Top-Entering Mixer is designed for a broad range of applications. It is available with motor pedestals up to 30 kW (40 hp) to ensure motor alignment. Exclusive hollow-quill drive (which is a torsionally resilient coupling that transmits power from the quill to the mixer shaft) isolates the gear train from severe shaft flexure, says the company. The mixer's mechanical seals feature a cartridge design that allows for easy replacement. They cover the range of 1 to 200 hp (0.75 to 150 kW), with speeds from 9 to 280 rpm, and are recommended for processes with relatively high fluid forces on the impellers and long impeller shaft applications, says the manufacturer. — *SPX Flow Technology, Rochester, N.Y.*

www.spxflow.com

Automation increases the reliability of fluid mixing

The ARO Electronic Interface pumps (photo) are air-operated diaphragm pumps that — when paired with the company's ARO Controller — provide accurate, electronically controlled batching and container filling. The ARO Controller provides an automated, closed-loop system with proprietary logic that ensures that the pump is always fully primed. This helps to control flowrates and provides pinpoint control for numerous fluids and applications throughout the chemical process industries (delivering $\pm 1\%$ repeatability when dispensing or batching, says the company). The ARO Controller works seamlessly with company's ARO EXP Electronic interface pumps, and can be integrated with many existing ARO EXP pumps when an electronic in-

terface package is added. This combination provides the user with a fully automated, multi-pump system that can handle batching as well as container and tank filling. The interface is pre-programmed with eight languages, supporting the needs of a diverse workforce and global operations. It can also be programmed with a variety of remote triggers (to initiate auto-shutdown and send data and service alerts to operators). These can be customized for the application at hand. Such triggers could, for example, notify operators when it's time for predictive maintenance, when liquid levels are low, or when a leak has been identified. — *Ingersoll Rand, Davidson, N.C.*

www.irco.com

One-stop shopping for mixers and portable agitators

This company offers a broad array of tank mixers and portable agitators that can be customized to meet the configuration of any tank or process. Top-entry tank mixing vessels are available in sizes ranging from small (50–300 gal) to large (3,000 to 100,000 gal), and a wide array of mixing and agitation options are available for bulk containers, such as drums and totes. The company offers a full line of portable mixers as well. — *Dynamix Agitators, Richmond, B.C.*

www.dynamixinc.com

Create gas mixtures with ease to calibrate flowmeters

When changes in gas composition occur in the field, the accuracy of flowmeters can be adversely affected. The Quadra Therm 64oi/78oi (photo) allows field engineers to adjust the composition of calibration gas for thermal mass flowmeters in the field, to improve the operating reliability and safety of flares, vapor-recovery units and storage vessels. The device relies on the company's proprietary gas-mixing software package. This software lets engineers and operators create, customize and upload an unlimited number of gases and gas mixtures, as needed, to compensate for gas compositional changes in the field, without any loss in flowmeter accuracy, says the company. — *Sierra, Monterey, Calif.*

www.sierrainstruments.com

Suzanne Shelley



Sierra

New Products

This tool provides realtime data on refractory wall loss

InDepth (photo) is a non-intrusive inspection tool that provides realtime critical measurement information concerning the condition of the refractory lining on the internal walls of process units, such as fluidized catalytic cracking (FCC) reactors, regenerators and boilers, while the system is operational. The portable tool can be used to accurately define the size of a known area of thin refractory and determine the full extent of the refractory wall loss. According to the company, the tool will help users to better prepare for upcoming plant turnarounds, as it can prevent unnecessary vessel entry and cost overruns. — *Tracerco Ltd., London, U.K.*

www.tracerco.com

Continuously monitor remote water facilities

The SAT4D system (photo) provides instant notification of changes in tank levels and pump malfunctions in remote or unattended water or wastewater facilities. This satellite-based monitoring system delivers immediate alerts of changes in conditions at pumps, wells and storage facilities located in areas without a phone line, Ethernet connection or cellular service. When an alarm occurs, the system sends notifications via telephone call, email or text message. The SAT4D system is self-powered and can operate for over three years on its replaceable battery. GPS technology pinpoints the location and status of equipment being monitored. Each unit is sealed in an enclosure to protect it from harsh conditions. — *Sensaphone, Aston, Pa.*

www.sensaphone.com

This filter-cart system can now handle smaller particles

This company's Model 634 portable filter-cart system (photo) is now capable of filtering particles down to 0.004 mm (4 µm). This system is suitable for many varieties of industrial fluids, including lubricants, quenching fluids, coolants, synthetic oils and petroleum-based fluids, says the manufacturer. The filter cart's 16-in. rubber wheels and ruggedized steel-

frame construction allow it to be easily transported. It can be pushed, pulled or lifted by crane or forklift. The Model 634 features an industrial-grade 5-gal/min internal gear pump, making it capable of handling a broad range of fluids. True three-tooth engagement between the rotor and pinion extends the service life of the pump and allows for pumping of higher-viscosity lubricants and gear oils. — *Kaman Distribution, Bloomfield, Conn.*

www.kaman.com/industrial-distribution

New waterproofing solutions for demanding applications

MasterSeal M 689 waterproofing membranes provide high chemical resistance to a wide range of substances, as well as an outstanding elasticity and toughness, ensuring longterm durability of the membrane, even when exposed to the most demanding situations, says the manufacturer. In addition, MasterSeal M 689 features high mechanical resistance, so it can be used in storage areas with regular traffic, protecting secondary-containment facilities, basins, pipeline bridges or trafficked impounding basins, and stopping any leakage before it reaches soil or groundwater. MasterSeal M 689 shows high crack-bridging capacities, both static (Class A5 according EN 1504 part 2) and dynamic (Class B4.2 according EN 1504 part 2), even at temperatures below 0°C. — *BASF SE, Ludwigshafen, Germany*

www.basf.com

Corrosion-resistant warning signals with two horn options

The new STEx range of stainless-steel explosion-proof warning signals (photo) feature a corrosion-proof 316L steel enclosure suitable for extremely aggressive environments. The signals feature seven lens colors with a UV-stable polycarbonate, field-replaceable filter. The alarm sounds with either traditional flared horns or an omnidirectional compact radial horn. Threaded flame paths enable quick installation and simplify maintenance inspection while the internal arrangement maximizes wiring space. — *E2S Warning Signals LLC, Houston*

www.e2swarningsignals.com

Tracerco



Sensaphone



Kaman Distribution



E2S Warning Signals



HDPE thread protectors that can be easily installed and removed

The thread-protecting SSR Series standard sucker-rod cap (photo) is designed to withstand impact and prevent cracking. Constructed of a strong, high-density polyethylene (HDPE) material to protect the threaded ends of steel sucker rods, the wide internal ribs of the cap allow for easy installation and a secure fit. The cap is easily removed with socket tools or wrenches. The extended shoulder length provides full coverage, reducing the chance for damage. — *Caplugs, Buffalo, N.Y.*

www.caplugs.com



4B Components

down functions. There is no need to remove the sensor from the machine shaft or change any system connections in order to use the device, allowing personnel to test speed switches during periodic inspection schedules, and help the facility fully comply with insurance audits. The latest version incorporates a new ergonomic housing and a display that uses less battery power, and is bright enough for viewing in sunny conditions. — *4B Components Ltd., Morton, Ill.*

www.go4B.com/usa

A handheld VOC meter for indoor air-quality maintenance

The HHAQ-107 meter (photo) makes general measurements of mixed-gas volatile-organic-compound (VOC) levels as part of an indoor air quality (IAQ) maintenance program. The HHAQ-107's metal-oxide semi-conductor sensor can detect ammonia, toluene, ethanol, hydrogen sulfide (H₂S) and cigarette smoke. Features of this handheld device include 32,000 data-logging points, included data-logging software and an adjustable audible alarm to notify of high VOC concentration. — *Omega Engineering Inc., Stamford, Conn.*

www.omega.com

Prevent cavitation in control valves with this new trim design

Valtek DiamondBack is a new anti-cavitation trim design for control valves in severe-service applications. This technology eliminates high-pressure-drop cavitation damage and the associated noise. In addition, the DiamondBack design can be produced in a range of materials, including tungsten carbide, effectively mitigating the effects of erosion. According to the manufacturer, DiamondBack also delivers up to 30% higher flow than comparable multi-stage valve trim with the same pressure drop, which in some applications, results in a smaller and lighter package than other designs. DiamondBack cavitation-elimination technology is available for installation in new or existing Valtek Mark Series control-valve body sizes. DiamondBack is able to pass slurries and entrained solids up to 15 mm without plugging. — *Flowserve Corp., Irving, Tex.*

www.flowserve.com

Inhibit corrosion with this new vinyl-ester-resin system

Flowchem is a new range of seamless, elastomer-modified vinyl-ester-resin systems that act as a barrier to inhibit the contact between chemical compounds or corrosive materials. Flowchem systems provide temperature resistance of up to 350°F, and exhibit high bond strength, abrasion resistance and durability, as well as reduced shrinkage, says the company. Vinyl ester resin — a hybrid of polyester resin strengthened by the addition of epoxy resin — offers protection against highly concentrated and aggressive acids, alkalis and solvents, including sulfuric, nitric and hydrochloric acid, as well as ethanol, butane and methanol. All systems within the Flowchem range offer fast cure properties to minimize downtime and any loss to production. — *Flowcrete Americas, Spring, Tex.*

www.flowcreteamericas.com

Realtime alarm verification for speed-monitoring systems

The SpeedMaster with Pulse Pilot (photo) is a device that provides independent, realtime verification of an entire speed-monitoring system to ensure that alarms and shutdowns are working as expected. The SpeedMaster operates in two modes: input mode provides the device with the machine's actual running speed; and output mode allows the device to test the speed switch at set underspeed trip points for realtime verification of the monitoring system's alarm and shut-



Omega Engineering

Avoid pelletization with this twin screw extruder

The ZSE-27 MAXX "direct-to-sheet" system (photo) facilitates rapid inline compounding and production of prototype sheet samples. Benefits of direct-sheet extrusion include the product having one less heat and shear history, and the economic savings inherent with bypassing the pelletization step. The system includes a co-rotating, intermeshing, twin-screw extruder; a process logic controller (PLC) with a 15-in. touchscreen; and a gear-pump front-end attachment with 20 cm³/rev capacity and a 5-hp a.c. motor. The ZSE-27 MAXX twin-screw extruder system and downstream lamination system each have their own PLC and human-machine interface. These two systems can operate independently, or together via Ethernet to allow fully integrated system sharing of recipe, data acquisition and logic or alarming data. — *Leistritz Advanced Technologies Corp., Somerville, N.J.*
www.leistritz-extrusion.com

Screen microbial strains with this micro-scale bioreactor system

The new ambr 15 fermentation system (photo) is an automated micro-bioreactor system designed to enhance microbial-strain screening with advanced capabilities supporting fed-batch microbial cultures. The new system has been specifically designed to meet the requirements of microbial fermentation. It comprises 24 single-use stirred micro-bioreactors (each with an 8–12-mL working volume) integrated into an automated workstation. The system offers parallel processing and walk-away control of all 24 micro-bioreactors, providing users with consistent results from the early-stage screening platform. — *Sartorius Stedim Biotech, Göttingen, Germany*
www.sartorius.com

These membrane modules are now available in a rack solution

R-Aquadyn is a compact rack solution (photo) based on the type UA1060 double asymmetric, hydrophilic low-fouling PAN hollow-fiber membrane modules. Its simple construction allows for the easy integration and installation of a set of pre-assembled

Aquadyn UA1060 modules into water-treatment plants, especially for large-scale projects, says the company. One rack unit comprises a set of 24 Aquadyn UA1060 modules, with a total membrane area of 1,440 m². These rack units can be manifolded to a larger rack of either 48 or 96 pieces. — *Microdyn-Nadir GmbH, Wiesbaden, Germany*
www.microdyn-nadir.com

This compact I/O system now has M12 connections

This company has expanded its product line of extremely compact Simatic ET 200AL IO (input-output) systems to include modules with the M12 connection system (photo), higher output currents and longer maximum distances between modules. Analog and digital actuators and sensors, such as IO-link devices, can be connected to the new M12 modules, which have up to 16 digital inputs. The high channel density reduces both the wiring effort and the space requirement for higher-quantity structures. As the output current is now twice as high, actuators with a current consumption of up to 2 A can be connected. Groups of actuators can be shut down safely according to SIL2 via the ET 200AL outputs. — *Siemens AG, Munich, Germany*
www.siemens.com/et200AL

Comprehensive corrosion data available on CD-ROM

At the end of October, the *Dechema-Werkstofftabelle* (DWT) 2015 was published as a CD-ROM, providing detailed information on the corrosion and chemical resistance of all industrially important metallic, non-metallic and organic materials in contact with about 1,000 types of corrosive media. With comprehensive information from all areas of corrosion protection, the DWT is an important decision-making tool for design engineers. Based on the well-established printed form, the DWT on CD-ROM features comprehensive text, images and tables. Fast navigation through the entire corrosion data collection is supported by a variety of search options. — *Dechema e.V., Frankfurt am Main, Germany*
www.dechema.de

Mary Page Bailey and Gerald Ondrey

Leistritz Advanced Technologies



Sartorius Stedim Biotech



Microdyn-Nadir



Siemens

Water Treatment Technologies

Department Editor: Scott Jenkins

Removing contaminants from water is a critical operation in the chemical process industries (CPI). The goal of treatment processes is to reduce the relevant contaminants to the extent required by the application. This column provides information on major categories of contaminants and on pretreatment, primary treatment and posttreatment technologies (Tables 1 and 2).

Pretreatment

Pretreatment technologies protect primary treatment equipment from fouling and chemical degradation.

Bed filters. Bed filters contain a porous bed of inert, uniformly sized particles, such as coal and sand. Typical bed filters can remove suspended solids down to 10 microns.

Cartridge filters. Cartridge filters are thick-walled tubes constructed of synthetic polymers. In string-wound constructions, the material is wound around the core in a pattern that creates a tortuous path through which the water must flow. Other constructions use nonwoven materials.

Bag filters. Bag filters usually consist of bags created of nonwoven fabrics, supported in housings.

Adsorptive filters. Activated carbon filters are available in either bed or cartridge configurations. The highly porous material can remove dissolved gases, volatile hydrocarbons and dissolved organic compounds.

Precoat filters. In precoat filters, diatomaceous earth is introduced into the water stream to coat a fine cloth or screen with the filter medium.

Chemical pretreatment. These techniques remove dissolved salts that can precipitate out of solution and interfere with downstream primary treatment technologies or to aggregate solids to make them easier to separate by settling or filtration.

Primary treatment

Primary water-treatment technologies are designed to bring the water supply to a desired quality level.

Membrane technologies. In membrane treatment techniques, bulk wa-

Class	Examples
Suspended solids	Clay, dirt, silt, dust, insoluble metal oxides and hydroxides, colloidal materials
Dissolved organic compounds	Synthetic organic compounds, trihalomethanes, humic and fulvic acids
Dissolved ionic compounds	Heavy metals, silica, arsenic, nitrates, chlorides, carbonates
Microorganisms	Bacteria, viruses, protozoan cysts, fungi, algae, molds, yeast
Gases	Hydrogen sulfide, carbon dioxide, methane, radon

Water treatment technology	Class of contaminants				
	Suspended solids	Dissolved organics	Dissolved ionics	Microbes	Gases
Bed filtration	Very effective	NA	NA	NA	NA
Cartridge filtration	Very effective	NA	NA	NA	NA
Bag filtration	Very effective	NA	NA	NA	NA
Precoat filtration	Very effective	Partially effective	NA	NA	NA
Activated carbon	NR	Very effective	NA	NA	Partly effective
Micro-filtration	Very effective	NA	NA	Partly effective	NA
Ultra-filtration	NR	Very effective	NA	Effective	NA
Nano-filtration	NR	Very effective	Effective	Very effective	NA
Reverse osmosis	NR	Very effective	Very effective	Very effective	NA
Distillation	NR	Partially effective	Very effective	Very effective	NA
Electro-dialysis	NA	NA	Effective	NA	NA
Electrodeionization	NA	NR	Effective	NR	NA
Ion exchange	NR	NA	Very effective	NA	NA
Ozonation	NA	Partially effective	Partly effective	Very effective	NA
Chlorine	NA	NA	NA	Effective	NA
UV radiation	NA	Partially effective	NA	Effective	NA

NR = not recommended; NA = not applicable

ter solution flows parallel to a semi-permeable membrane while under pressure, so that some of the water is forced through the membrane to create a clean permeate stream. Turbulent flow minimizes accumulation of particulate matter on the membrane and allows continuous operation.

Oxidation methods. Advanced oxidation technologies remove dissolved organic compounds and microbes by using strong oxidants to break organic covalent bonds. Ultraviolet (UV) radiation uses light at ~254 nm wavelength to inactivate bacteria and other microbes. Ozonation uses O₃ to inactivate microbes and oxidize contaminants, such as Fe, H₂S and Mn. H₂O₂ treatment can also destroy organic compounds in water, and breaks down into oxygen and water.

Distillation. Distillation leaves behind nonvolatile contaminants. It removes suspended solids and dissolved salts, but has high energy costs.

Ion exchange. Ion-exchange resins can be used to remove ionic contaminants by adsorption. Cation resins adsorb cationic contaminants and exchange them for H⁺, while anion

exchange resins adsorb anionic contaminants and replace with OH⁻ ions.

Electrodialysis. An electrochemical membrane separation process where ions are transferred through a pair of ion-exchange membranes under and electric potential difference.

Electrodeionization. This technique combines electrodialysis and mixed-bed ion exchange.

Bioremediation. Bacteria metabolize organic materials (for more, see *Chem. Eng.*, Sept. 2015, pp. 56–61).

Posttreatment

Posttreatment technologies keep water at a certain quality level during storage and distribution.

Polishing. Polishing removes trace contaminants that enter the water during storage and distribution.

Disinfection. Chemical disinfectants are typically oxidizing agents, such as chlorine. In water, chlorine forms hypochlorite ions, which inactivate most pathogenic microbes. Irradiation with UV radiation is another technique. ■

Editor's note. This column was adapted from: Cartwright, P., *Process Water Treatment – Challenges and Solutions*, *Chem. Eng.*, March 2006, pp. 50–56.

Maleic Anhydride from *n*-Butane (Fixed-bed Process)

By Intratec Solutions

Maleic anhydride (MAN) is a multifunctional chemical intermediate with applications in several fields of the chemical process industries (CPI). Its major end use is as feedstock in the production of unsaturated polyester resins (UPR). In addition, maleic anhydride can be used as a raw material in the production of 1,4-butanediol (BDO), gamma-butyrolactone (GBL) and tetrahydrofuran (THF). BDO has been one of the world's fastest growing chemicals in recent years.

The process

The following paragraphs, along with Figure 1, describe a process for producing MAN from *n*-butane. The process described is a fixed-bed technology similar to the one owned by Huntsman Corp. (Danbury, Conn.; www.huntsman.com).

Reaction. Fresh butane is vaporized and mixed with air before being fed to the reactor. The oxidation reactor consists of a fixed-bed, multi-tubular reactor containing a vanadium phosphorus-oxide catalyst supported on silica.

The heat generated in the highly exothermic reaction is removed by a molten salt circulated through the jacket that surrounds the reactor tubes. The molten salt is then passed through an external cooler and cooled by boiler feedwater, producing steam.

The reactor exit-gas stream is mainly comprised of maleic anhydride, water vapor, carbon oxides, oxygen, nitrogen and unconverted butane. This stream is then partially condensed. The condensate stream is sent to the purification area, while the gas stream

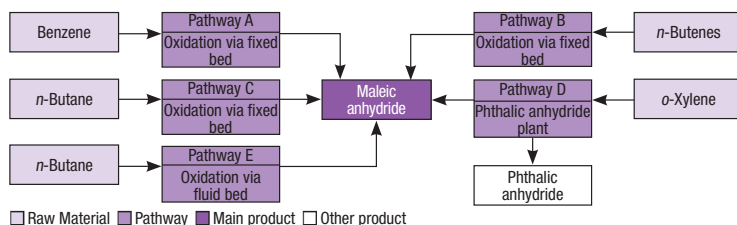


FIGURE 2. There are several maleic anhydride production pathways

is sent to an absorber column for recovery of the remaining MAN.

MAN recovery. MAN that was not condensed is recovered by absorption with a solvent. The residual gas (containing mainly nitrogen, CO, CO₂ and unreacted butane) is removed at the top of the column. This stream is sent to a thermal oxidizer for incineration at offsite facilities.

The recovered stream from the bottom of the absorber column is sent to a solvent recovery column, in which MAN is recovered as the distillate. The MAN recovered in this step is mixed with the condensate from the reaction area and then sent to two purification steps for obtaining pure maleic anhydride.

The solvent, recovered from the bottom of the solvent-recovery column, is returned to the absorption column. A small portion of the solvent stream is sent to a solvent-purification step for removal of impurities.

Purification. The purification area consists of two distillation columns for the removal of light-end impurities and heavy-end impurities. The final product from purification is MAN with purity greater than 99.8 wt. %.

Economic performance

The total capital investment estimated to construct such a plant producing

60,000 metric ton (m.t.) per year of maleic anhydride in the U.S. is about \$150 million. The capital investment presented includes the total fixed capital, working capital and additional capital requirements. The production cost is estimated at about \$830/m.t. of MAN. Other assumptions made are:

- Period of the analysis was the first quarter of 2015.
- The plant includes tanks providing a total storage capacity of 20 days for *n*-butane raw material.

Global perspective

Maleic anhydride was first commercially produced in the 1930s via benzene oxidation. However, the increase in the price of benzene, as well as the recognition of benzene as a hazardous compound, boosted research toward alternative pathways for MAN production. Currently, MAN is mostly produced using *n*-butane as the feedstock. Figure 2 illustrates alternative pathways for the production of maleic anhydride. ■

Edited by Scott Jenkins

Editor's Note: The content for this column is supplied by Intratec Solutions LLC (Houston; www.intratec.us) and edited by Chemical Engineering. The analyses and models presented are prepared on the basis of publicly available and non-confidential information. The content represents the opinions of Intratec only. More information about the methodology for preparing analysis can be found, along with terms of use, at www.intratec.us/che.

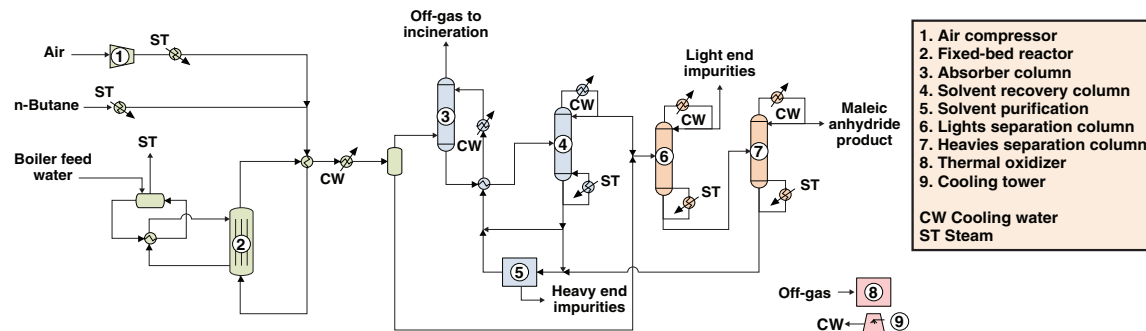


FIGURE 1. The process shown for maleic anhydride from *n*-butane via fixed-bed technology is similar to Huntsman Corp.'s

Optimizing the Design-to-Cost Cycle

By intensifying cooperation between process designers and cost engineers in the conceptual stage of plant projects, better-informed decisions can be made on the economic viability of plant projects

Stefan Bakker
Cost Engineering
Consultancy

IN BRIEF

PROCESS DESIGN AND
COST

FOSTERING
COMMUNICATION

EVALUATING
ALTERNATIVE SCENARIOS

OBJECT-ORIENTED
ESTIMATING

FOCUS ON COST
ANALYSIS

BECOME A LEARNING
ORGANIZATION

MULTIDISCIPLINARY
APPROACH

CONCLUDING REMARKS

The global economic environment is competitive, demanding and fast-paced, and becoming more so. The world has become more integrated through the expansion of trade, investment and communications, leading to more international competitive pressure [1]. This effect also leads to a continuous shortening of project lifecycles; decreasing profit margins make it imperative that new plants move quickly into operational mode. This trend requires a change in how to approach the cost engineering for new potential projects.

To succeed in these challenging times, chemical process industries (CPI) companies, among others, need to be able to identify economically viable projects as early in the design process as possible, thereby minimizing time and money spent on potentially non-profitable endeavors. In order to remain competitive and maximize business performance, optimal process designs must therefore be identified quickly with the minimum risk of rework, because design changes further in the project-development cycle come at the expense of higher cost and more effort (Figure 1).

Process design and cost

The challenge of quickly identifying optimum process designs reflects on two very different disciplines involved in a project. On one side, there are the process designers, responsible for process optimization, in terms of throughput rate, process yield and product purity. They must also take into account

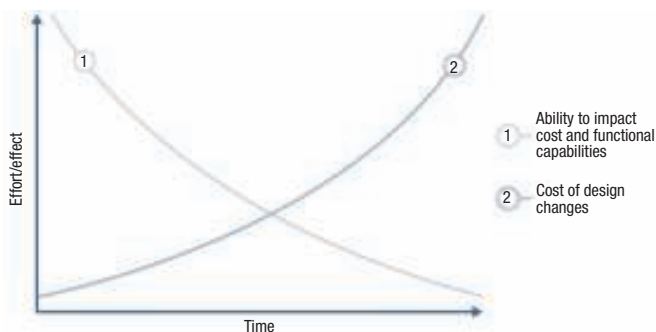


FIGURE 1. The cost of design changes rise as plant projects progress [2]

factors such as reliability, available space and safety concerns. Of course, capital cost will certainly be considered, but it is not their main concern. Cost engineers, on the other hand, are less involved in the actual design of the process, but rather with how much it is going to cost. Their findings can be compared to the business case drawn up by the project's owner to assess the viability of that particular project design.

In order to assess a design for its costs, process engineers and cost engineers should work closely together during the economic analysis of the different solutions.

During conceptual and front-end engineering and design (FEED) project stages, process engineers should aim to accomplish the following objectives:

- *Informed decision-making.* Analyze and evaluate the different process alternatives early in the project lifecycle in order to make a substantiated decision to "do the right project," in terms of its economic viability
- *Engineering time and cost savings.* Allowing engineers to quickly and easily deter-

mine the cost implications of their process design choices will reduce the number of man-hours spent on evaluating expensive process configurations and validating data to support decision trade-offs.

- *Re-use of (cost) engineering knowledge.* When process engineers are more involved in the cost aspects of projects, it will become much easier to re-use information about cost objects (equipment groups) when preparing the process design, resulting in more cost-effective solutions.

To achieve this, the process engineer and cost engineer need to intensify their cooperation during the conceptual phase. This article explores how this cooperation can be organized to allow for informed decision-making during the conceptual design and FEED phases.

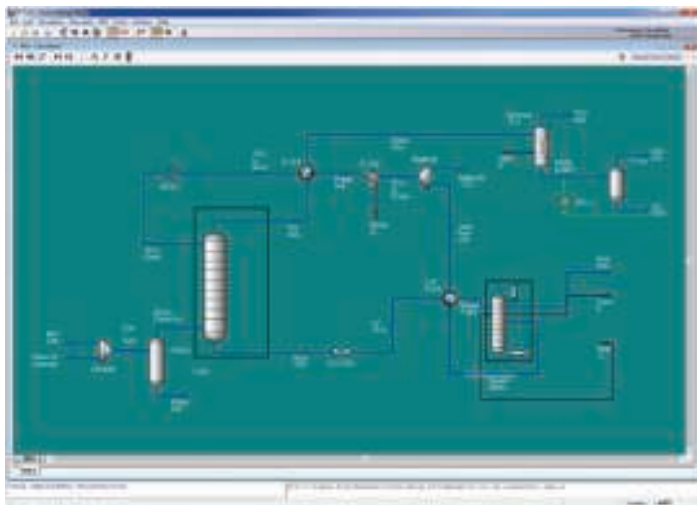
Fostering communication

In many companies, the engineering disciplines that are involved in realizing a project (such as process-, mechanical-, piping- and cost engineering) are segregated. This is often done to increase effectiveness within each discipline, but usually leads to reduced interdepartmental cooperation, since the exchange of information tends to follow an “over-the-wall” principle, where personnel from different disciplines are not fully aware of each other’s concerns and priorities.

It is important to have a robust and open communication platform between these disciplines, because they are closely related to each other. For example, the placement of the equipment items determines to a large extent the costs of the main pipelines. The complex task to come to an optimal plot plan requires close interaction between the different disciplines.

In order to evaluate the cost implications and economic viability of a project, the cost engineer should assess the different design alternatives. This requires an optimal flow of information between process engineers and cost engineers.

Fortunately, the automation and digitalization of most activities within these disciplines enables us to share and access useful information, although both process engineers and cost engineers have their own (software) tools to respectively design and estimate the project. This arrangement, by the way, is a good thing — specializations like these truly need dedicated tools, specifically designed for their purpose. But the potential gain of enabling easy exchange of information is evident; it can prevent the evaluation of the cost implications of each design alternative from



becoming a complex and especially time-consuming task.

FIGURE 2. Modeling with process flow diagrams allows the use of equipment groups called “cost objects”

Evaluating alternative scenarios

In order to determine the required information that should be transferred between the process design and cost engineering groups, it is important to understand the cost estimating methodology that is commonly applied during the conceptual and FEED phases of a project.

Traditionally, equipment-factored methodologies, or simply “factor estimating,” is applied during the conceptual and FEED phases of a project. This method uses the correlation between the total equipment costs and the costs of related disciplines (piping, civil, electrical and instrumentation and so on) to estimate the total installed cost (TIC). For each type of process equipment, different factors are used to reflect the differences in the costs of piping, foundations, cables, instrumentation and so on. Although this is a commonly accepted estimating methodology during early phases of project development, the accuracy of the TIC estimate strongly depends on obtaining the correct cost values for all equipment. This, in turn, requires precise and correct information about equipment parameters, such as sizing, metallurgy and capacity. Cost estimating software can use these equipment parameters as an input to parametric equipment models (based on cost-estimating relationships) to come up with an accurate estimate for the equipment.

To quickly screen and compare different project designs on costs and economic viability, a cost engineer needs to get the equipment parameters as an input from the process engineer to make a factor estimate.

This is where the integration between process-design tools and cost-estimating tools

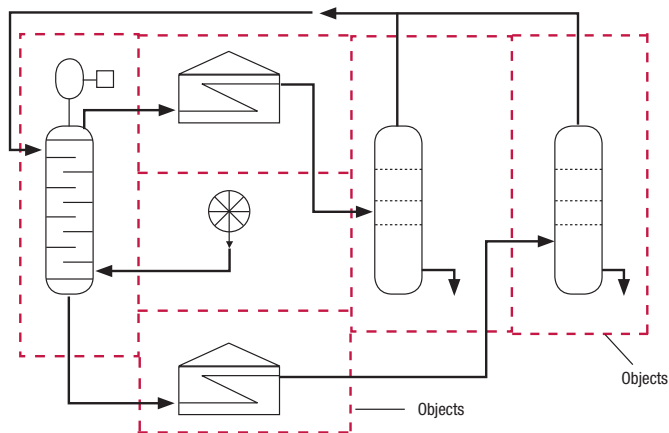


FIGURE 3. Recent software developments allow integration between process design and cost engineering

can deliver its value. When it becomes possible to feed the process data directly from the former to the latter, these data can be automatically mapped with cost models to produce a cost estimation for the simulated project scope. This way, the cost of process designs can be estimated in less time, allowing for the estimation and consistent comparison of multiple design alternatives. Examples of the combination of two software solutions offering this functionality are now available, and together, the two can cover the entire project lifecycle, from preliminary process design to project execution.

As a result, only the (most) profitable designs will be developed further, reducing the amount of (re-)engineering effort.

Object-oriented estimating

Of course, such a high-level factor estimate of a process design might get you through the first “go/no-go” decision gate, but it is in no way sufficient to actually build the plant. The next step is the more advanced estimating methodology: object-oriented estimating.

Based on data from previously executed projects, it is possible to identify characteristic values from those projects. Characteristic values are metrics used for object-oriented estimating in order to determine the expected project quantities, without having to involve a full design team to determine these quantities. Some examples of characteristic values are:

- An average of 150 m pipe per equipment
- An average size of 4.5-in. pipe
- An average of 0.9–1.2 control valves per equipment
- An average of 5.5 field instruments per equipment

These characteristic values can be used to create “cost objects” — combinations of characteristic values for each discipline, representing the associated scope (Figures

2 and 3). A cost object can be, for example, a pump with associated foundation, piping, instrumentation and electrical work. The cost objects are driven by the quantities of the characteristic values. These quantities (the generic equivalent of material take off (MTO) quantities) can be priced using historical data, to derive the total project cost. One of the main advantages of focusing on quantities, rather than costs, is that quantities are better understood by the engineers and designers. This approach, thus, can improve communication.

It is clear that object-oriented estimating requires more time, effort and (historical) knowledge than factor estimating. However, since projects often have multiple go/no-go stages, it can be a suitable supplement if, of course, the required data are available. The method increases accuracy not only by accounting for a larger number of variables, but also through the possibility of fine-tuning specific components (for example, the pipe length associated with a storage tank). A factor-estimating approach succeeded by object-oriented estimating thus further enhances the evaluation process of the different design alternatives.

Focus on cost analysis

When, after careful consideration, a project advances to the detailed engineering phase, the added details of the plant design as created by the process-engineering team will eventually result in a (bulk) MTO.

Until not so long ago, it was common practice to manually translate such an MTO into a cost estimate. Thanks to modern technology however, it is now possible to speed up that process through an automatic analysis of the MTO based on commonly used terms; a cross-reference with historical data, possibly supplemented by publicly available market data or preliminary quotes, can result in a fairly accurate estimate.

This method further supports the objective of identifying the most cost-effective design, since it simplifies making slight design alterations while seeing the impact on costs in almost realtime.

Become a learning organization

By no means does an approved project estimate represent the end of a project — it is at the execution phase that the estimate is challenged by reality. Some might argue that, at this point in time, the project is out of the hands of the cost engineer, but this is actually a perfect opportunity to learn. Cost engineers should be sure to stay involved

throughout the project until the very end. Every finished project can have a learning effect, through reusing the data of executed projects in early type estimates for a future project during conceptual design, creating a continuous improvement cycle.

Multidisciplinary approach

Getting good insight into the cost implications of process designs is not the only advantage of the link between process- and cost-engineering tools. Because process engineers can almost directly see the cost impact of changes in the process design, their cost awareness will improve. From a technical perspective, it could be a perfect solution to double the size of a heat exchanger, but perhaps it will be more cost-effective to have two separate items to achieve the same result. Eventually, the process engineer will be able to recognize those designs that are optimally cost-effective before effort and time are actually expended to develop less effective designs.

The reverse benefit is also realized by linking process and cost engineering — the cost engineer will get a better understanding of the process engineer's thoughts. This will improve the communication between the two disciplines. Keep in mind that it is not recommended to make the process engineer responsible for the cost estimate, or vice versa. But in the end, by combining each other's knowledge, the synergistic effect will result in an optimal technical and economical solution for the project.

Concluding remarks

CPI companies should strive to make better decisions earlier in the project development stage. To achieve this, good, early insight into the technical, as well as the economic, viability of a project during the conceptual and FEED phases is required. Recent software developments allow for a tight integration between process design and cost engineering software, making it possible to compare design alternatives and choose the most profitable solution (Figure 4). This will result in the following:

Informed decision-making. By having a clear understanding of the cost implications of process-design alternatives, better informed decisions can be made. Even during the conceptual phase, engineers will be better able to choose the “right” project, based not only on technical factors, but also economic ones.

Engineering cost and time savings. The collaboration between process designers



FIGURE 4 . Cost objects consist of the equipment item and its associated disciplines. Together the cost objects form the complete project

and cost engineers will significantly reduce the time required to estimate the different process alternatives, while at the same time, the number of re-engineering hours will be reduced, because unprofitable process designs are identified early on in the project development stage.

Enhanced flexibility. Process engineers will have the ability to quickly explore the cost impacts of design changes, allowing more flexibility to explore “out-of-the-box” solutions that normally would not be considered.

Transparency. Through the use of the object-oriented estimating method, based on the input of high-level process equipment information, the cost estimate can be given a hierarchical structure, from detailed information, up to the object level. This provides a transparent view on the build-up of the cost estimate.

Communication. The integration of otherwise isolated process- and cost-engineering tools will help to remove communication barriers between the two disciplines. ■

Edited by Scott Jenkins

Reference

1. Dahlmann, C., Technology, globalization and international competitiveness: Challenges for developing countries. United Nations publications. Accessed from: http://www.un.org/esa/sustdev/publications/industrial_development/1_2.pdf.
2. Chardon, R., Graph of design changes versus cost, Cost Engineering Consultancy, 2015.

Author



Stefan Bakker is a certified cost engineer at Cost Engineering Consultancy (Jusselmeester 32e, 3332 EX Zwijndrecht, the Netherlands; Phone: +31 78 620 09 10; Email: SBakker@costengineering.eu; www.costengineering.eu), an independent cost-engineering services and software provider established in 1996. Along with the company, Bakker has helped owners and EPC contractors worldwide in their cost engineering activities on numerous industrial projects. Cost Engineering Consultancy's main areas of expertise are: cost engineering services (cost estimating, cost control, risk management); cost data development; cost engineering academy; and total cost management software (Cleopatra Enterprise, a cost-management solution that can now be linked to Honeywell UniSim Design software (Honeywell Corp.) in order to get the required process data to provide engineers with a cost estimation of the project.

Competitive Pricing of Process Plants

Accurate pricing of CPI plants involves integrating technical design with economic evaluation and accounting for many types of risk. Knowledge of costing methods from the perspective of EPCs and owner-operators is critical

Seán Moran
Expertise Limited

IN BRIEF

COST ESTIMATION
CLASSES

ACADEMIC COSTING
PRACTICE

PROFESSIONAL COSTING
PRACTICE

LINKING COSTING WITH
DESIGN

COMPETITIVE DESIGN
AND BIDDING

EVALUATING RISKS



Engineering is, by its nature, a commercial activity. It is virtually impossible to separate the cost aspects of engineering from the design aspects. If you aren't costing, you aren't engineering (see sidebar, Linking Costing and Design). Engineers consider the implications of every choice they make at every stage of a project from the perspective of cost, safety and process robustness. This article is intended to improve understanding of costing methods within the context of plant-design bidding and to describe the many components that need to be considered to achieve accurate costing. Whether you are approaching cost engineering from the perspective of an engineering, procurement and construction (EPC) company that is bidding on projects, or from the perspective of a plant owner-operator, a systems-level approach to costing is required.

Cost estimate classes

Conceptual design is sufficient for what EPC contractors would call a budget estimate of costs. If you get a budget estimate from an EPC contractor, it will probably be accurate to around $\pm 30\%$, as they have a significant amount of data from equipment suppliers and genuine knowledge of just what it costs to engineer and build plants.

Beginners without this information and experience can produce estimates that are off by several hundred percent (almost always underestimates). They tend to leave out everything other than very core processes, have unrealistic ideas of the cost of engineering and construction, have no knowledge of the cost of engineering by other disciplines and so on.

Accounting for profit is also important. In educational settings, many students seem

to be willing to forgo profit — a critical aspect of the business side of engineering. They certainly frequently forget to add it to their estimates.

Professionals working in contracting companies conduct a very detailed design, and price all the goods and services required to supply it, as well as considering risks, margins, contingency and so on.

Engineers have quantified this into five classes of cost estimates that are used by public bodies in the U.S. and worldwide (Table 1 [1]).

Academic costing practice

To decide if it makes economic sense to proceed with a particular design, a quick way to estimate capital and running costs is needed. The “main plant items (MPI)/factorial” method is almost always used in academia (though far less commonly in practice). A more sophisticated process that increases in resolution as the project progresses is that of economic potential as developed by Douglas [2].

Capital cost estimation. It is not possible to obtain supplier quotations for every piece of equipment and every item of engineering services in academia as a professional would, so a standalone costing methodology is needed for use in the academic setting. Chemical engineering departments worldwide seem to do more or less the same thing: First, estimate the cost of main plant items, usually from cost curves. Timmerhaus and Peters [3] contains many of these curves. Factors are included with the base costs for the curves to account for items like operating pressure, special materials of construction and so on.

Having added up all the main plant item costs, the installation and other engineering and construction costs as a percentage of MPI costs, can be estimated using Lang factors, such as those found in Chapter 6 of Sinnott and Towler [4]. We might then account for inflation using the *Chemical Engineering Plant Cost Index (CEPCI)* or similar indexes. This allows us to estimate the capital costs (capex) of the plant very roughly.

Operating cost estimation. In academia, operating costs (opex) are usually estimated as a percentage of capital costs, often a nominal ten percent. It is actually possible to get a lot closer to professional practice than this (even in a university setting).

Professionals estimate how much power, chemicals, manpower, capital and so on will be required to run the plant, and price these inputs at market rates.

LINKING COSTING AND DESIGN

The 19th-century American civil engineer Arthur Mellen Wellington is credited with stating that “Engineering ... to define rudely, but not inaptly, is the art of doing that well with one dollar, which any bungler can do with two after a fashion.” The quote hints at both the importance of linking technical design with costing, and of the inherently competitive nature of project design. In the chemical process industries (CPI), and elsewhere, the degree of confidence that engineers have in the performance of their technical designs is the maximum degree of confidence that should be placed in the costing. If you obtain a very precise costing for a vaguely described process, the potential for cost variation is all in the uncertainty of the process definition.

Sufficient effort should be put into pricing at each stage of design to allow a rational commercial decision to be made as to whether to proceed to the next stage, but ideally no more, because costing exercises themselves cost money.

In one way or another, all design is competitive. Even if you are doing an in-house design, it needs to be the best design it can be against the evaluation criteria, and you can rest assured that when it goes out to the engineering contractor, they will be redesigning it as much as they are allowed to maximize their profit, and minimize their risks.

I have worked in a few places where technical and economic evaluation have been split, and all have provided salutary lessons in why they should not be. Decision making processes were very poor, and too easily swayed by what is “in fashion” or by the whim of managers. □

TABLE 1. THE FIVE CLASSES OF COST ESTIMATES

Estimate class	Name	Purpose	Project definition level
Class 5	Order of magnitude	Screening or feasibility	0 to 2%
Class 4	Intermediate	Concept study or feasibility	1 to 15%
Class 3	Preliminary	Budget authorization or control	10 to 40%
Class 2	Substantive	Control or bid/tender	30 to 70 %
Class 1	Definitive	Check estimate or bid/tender	50 to 100%

Payback period and NPV. Slightly more sophisticated financial analysis such as net present value (NPV) can be undertaken in an academic setting, as well as in professional practice. Payback period tells us how long it takes to recover our capex from revenues and profits. Net present value discounts future revenues and expenditure to reflect the fact that we care less about our money in the future than we do about our money now, and also about inflation and interest rates on borrowed money.

NPV can be criticized from an ethical viewpoint, as large expenditures far in the future are automatically thought fairly unimportant. It can therefore be used to justify projects with very high future decommissioning costs (such as oil rigs and nuclear power plants) in ways that environmental groups would disagree with. Accountancy is not value-free.

Sensitivity analysis. Costing can be firm and uncertainty quantified with an honest sensitivity analysis.

Sensitivity analysis varies the costs and revenues that might apply to a system and considers the shape of the cost-benefit curves obtained. If profitability falls off sharply around assumed costs and revenues, the process economics are not very robust. In

EVALUATING RISKS

Process risk is only one of the several kinds of risk factors required to arrive at a robust pricing. It is not just a question of what the plant costs and what the labor to design and build the plant costs, all aspects of risk also need to be accounted for.

Process novelty is a key aspect of process risk — the more novel the process, the greater the chance it will underperform, or fail to perform at all. If your plant fails its performance test, your company will probably be paying penalties every day until it is fixed at your company's expense. Performance bonds, which insure process risk, can be purchased, but they increase cost as well, and the more novel the process, the higher the costs of the performance bonds.

There are also financial risks — overseas contracts can be subject to currency fluctuations, and even domestic contracts can see significant inflation. If you have made heavy use of a material that is particularly subject to price fluctuations (which need be no more exotic than stainless steel), equipment and components can cost a lot more than expected.

Political risks also need to be considered — countries can fall out with each other, industries can be nationalized without compensation, wars can break out, and closer to home, regulation can disallow certain approaches, or make, for example, waste disposal far more expensive than originally anticipated.

Sensitivity analysis is the key to understanding these risks, and deciding how to price them. You are unlikely to win a competitive tender if you price all risks in to your offer at 100% probability, but at the same time, you need to price risks so that you won't regret winning the job.

A reasonable guide to pricing risk is to multiply the probability of occurrence of an event by the cost of it occurring. Many competitors in a commercial situation will, however, undercut this value considerably, so it becomes important as an EPC contractor to exercise judgment based on the result of a sensitivity analysis that includes a number of these probability-cost calculations. This approach gives the best chance to win the job, but not to regret winning it.

In commercial practice, all of these factors need to be considered to produce a price estimate that is accurate within a few percent.

This price will need to be based upon a plant design that is optimized to meet the client tender evaluation criteria: whether these are the lowest price that meets the specification, the lowest lifecycle cost, the best net present value or the fastest payback period. all of these criteria affect every aspect of competitive design. □

an academic setting, it is not as important that students obtain a realistic price; it is more important to understand how accurate the price is. The goal is to establish a range within which the professional price lies, plus a realistic estimate of where it is most likely to lie.

In professional practice, obtaining the right price can make the difference between a company staying in business or going bust. The price offered in a bid for a project would be selected from a range informed by sensitivity analysis.

Professional costing practice

I spent most of the first five years of my career producing proposals for turnkey plants for EPC contractors in the (ultra-competitive) international water industry. After some time, I improved to the point where I won a lot of contracts for the plants I designed and bid. This was sometimes based on price and sometimes on technical merit. Winning a contract is not always about offering the lowest price, although doing so usually helps quite a bit. From my experience in recent

years, little seems to have changed other than the much increased use of computers and external design consultants than used to be the case.

Accurate estimation. Competitive bids are usually invited from potential suppliers for the various goods and services used to construct a plant before a process contractor makes a firm and fixed price offer to an ultimate client (see sidebar, Competitive Design and Pricing). A “firm price” is one not subject to negotiation (which doesn't stop contractors from trying), and a “fixed price” is one offered only for a stated period of validity (which doesn't stop them asking for an extension of the period).

Three is usually thought to be a good number of bids to have for any significant piece of equipment. A smaller number means that there might be a limited number of places where that item can be obtained, which adds risk (see sidebar, Evaluating Risks).

Bids returned by potential suppliers are checked against the specification, to ensure that all the aspects that have been asked for have actually been included (which is frequently not the case), and that the requested payment terms and other contract conditions have been complied with (also frequently not the case).

Once bids have been standardized, an “apples to apples” price comparison is possible, and a supplier is provisionally selected on an “or approved equal” basis. These prices constitute firm fixed offers by third parties to supply the item for a given sum. At this point, they are not estimates, but are guarantees to offer the goods for the price quoted during the validity period.

Enquiry documents need to be detailed enough to allow suppliers to understand completely what is required both technically and commercially. If they are not, suppliers may decline to quote, or may price the uncertainty into their quote, leading to high prices all around.

Purchasing companies will have their own terms, end-user client companies will have theirs and equipment vendors will have their own. It is frequently the case that enquiry documents will ask for quotations based on a combination of client and contractor terms, and vendors will offer their own terms in their offers.

This is not a trivial matter, and the differences in prices between alternative suppliers are often less than the price implications of variation in contract terms between offers. This issue will need resolving to obtain a

genuinely firm price.

If you work in a process contracting organization, you may well have easy access to many firm prices for exactly the kind of equipment you are pricing from quotes received for previous jobs. The basis of even your rough budget estimates can consequently be very accurate.

Bought-in mechanical and electrical items. Professional engineers price unit operations as one or more purchased items of equipment, (known as “bought-in items” — for example, a distillation column or compressor physical plant bought as a set of discrete items) by sending enquiry documents to relevant equipment suppliers.

These prices usually have to have an amount added by those pricing the complete plant to address the bits the various suppliers have left out of their bids, so that they can be evaluated on a like-for-like basis.

They will probably also have amounts added to reflect risk. For example, the fewer potential suppliers means a greater risk that prices will rise, or that a particular piece of equipment will not be available in time or at all.

Control panels, also known as motor control centers (MCCs), can be purchased as discrete items, or along with electrical installation and software supply. Pricing these will usually require input from an in-house electrical engineer, and probably an element of in-house electrical design will be required to produce sufficiently detailed enquiry documents to obtain reasonably accurate quota-

COMPETITIVE DESIGN AND PRICING

Design and pricing are always competitive, and I always assume that process plant designers are doing it for profit rather than fun (though it is sort of fun when you get the hang of it).

You can cut your margins of safety as far as you dare, you can negotiate with suppliers, discipline managers and financial directors at the pre-tender stage, but you can only get so far by reducing your bought-in cost and margins by either arm-twisting or charm.

The way to win better contracts more of the time is to design yourself ahead. Don't do what everyone else is doing, but a little less well, for a little less money — do something better. That's why good process designers get the big bucks.

You don't need to be too radical to find all sorts of little ways to be a little bit more clever than the other guy, and if you find enough of them, you can win work with decent profit margins. Much of this approach has to do with seeing the system working together as a whole and seeing the full implications of making small changes. As with all chemical engineering, it is important to establish and maintain a system-level understanding. □

addition to the skilled labor required to fix and mechanically commission the mechanical bought-in items) the pipework, brackery, supports and so on required to make a working plant. They may also carry out a detailed design of the pipework support systems, and supply any non-specialized valves and other equipment.

These bids are, at best, only as good as the drawings the bidders have been given, although they are less prone to underestimation and price escalation than electrical installation bids.

Supply and installation of cables, emergency motor-stop buttons, site lighting and small power sources, and making connections from MCC to motors will normally be the responsibility of a specialist contractor. These elements are possibly the most prone to underestimation by beginners. It

Electric components are among the main areas in which cost overruns occur after contract awards

tions for MCCs. Computers of various types (PCs, PLCs, DCS systems, or supervisory computers) may also be bought as discrete items or integrated with the MCC.

Electric components are among the main areas in which cost overruns occur after contract award. Greater care should be taken to adjust bids for missing items, and price risk associated with electrical and electronics-related bids than those for mechanical equipment. The in-house electrical engineer should also be involved in bid evaluation.

Mechanical and electrical installation. Mechanical installers will usually supply (in

is important to issue sufficient information to installers to make sure that everything needed has been accounted for, and ideally the offer should be checked by an in-house electrical engineer.

Software and instrumentation. This may be provided in-house by some combination of MCC supplier or installation contractor, or a specialist may be used to install and commission instruments, program programmable logic controllers (PLCs), and set up supervisory control and data acquisition (Scada), distributed control systems (DCS), remote telemetry and such systems.

CIVIL AND BUILDING WORKS

"How much is a ton of pumps?"

— Anonymous civil engineer

Civil engineering companies work on very tight margins, and tend to interpret their communications very literally. They work from drawings, so you need to make sure that any drawing issued to them for pricing is very clearly marked with respect to those elements that you are willing to stand by later, and those that are indicative only.

Their pricing methodology is based on counting tons of stuff. Once they have completed a design, they "take off" from their drawings how many tons of concrete, reinforcing steel (rebar) and so are required. They are consequently usually in a hurry to get their longest lead time item (design) started, and will often pressure you for the required information.

It is best to wait until you have a reasonable degree of certainty before issuing it, if for no other reason than because civil engineering companies have a reputation for being far more litigious than other disciplines.

Civil and building costs are relatively easy to control as long as you have nailed down the usual weasel words in civil-engineering-pricing documents (for example, "unforeseen ground conditions") during the initial stages. □

Great care has to be taken in pricing software and instrumentation, as it is a major potential source of cost overruns at construction stage, especially due to underestimation of the number of inputs and outputs to the system.

Design consultants. Nowadays companies are increasingly using the services of design houses to carry out design, especially of specialist items. If you are planning to do this, you will need to price it in, and allow for the strong possibility of requirements for additional design work later in the project. This can come to a surprising amount of money. At the time of writing, the going rate in the U.K. for an experienced process design engineer is £150 (\$230) per hour, for example.

Project programming. Professional engineers produce a schedule or program of events that sets out the timescales for the key elements of the design-construction-commissioning phase and allocates resources against each of the tasks required. This allows pricing of those items whose costs are based entirely on their duration of use (such as, for example, hire of site trailers). The schedule also indicates how many hours will be required for each discipline, and whether the company has the resources to handle the project in-house, or will need to buy in (usually more expensive) external resources.

Man-hours estimation. The proposals engineers will have produced their estimates for how many hours of each discipline will be required to do the job, but the discipline managers within a company will also want to give their estimate of how long it will take their people to do it. Since the discipline managers are the ones who have to deliver

the project, and the proposals engineer is responsible for winning the work, discipline manager estimates tend to be on the high side, and proposals engineer's on the low side. There should be some negotiation between these parties.

Pricing risk. Once you have prices for all the goods and services you need to make the plant, you need to make sure that you have allocated money for the chances of process, financial, legal, political or other risks going against you. In addition to adding amounts of money to individual prices, as previously described, you might do this formally by buying a form of insurance known as a performance bond, which usually costs a fraction of a percent of the complete contract value. Or you might add an overall contingency, which is built into your price. Alternatively, you might declare the risk to the client, and declare a prime cost (PC) sum that you would charge if the possible adverse event materializes.

Margins. Margins vary greatly from industry to industry (see sidebar, Civil and Building Works). When I was pricing water treatment plants for a living in a very competitive sector, we were happy to get paid 22% more than our bought-in costs. Some very sharp practitioners were bidding contracts at less than cost, by leaving things out that had to be included later (under what are called variation orders at top dollar. Generally, the less money there is in a sector, the tighter the margins, and the more sharp practitioners there will be. ■

Edited by Scott Jenkins

References

1. AACE International: Recommended Practice no. 18r-97: cost estimate classification system—as applied in engineering, procurement, and construction for the process industries 2005 AACE international: www.aacei.org/non/rps/17r-97.pdf.
2. Douglas, J. "Conceptual Design of Chemical Processes," McGraw-Hill, New York, N.Y., 1988.
3. Peters and Timmerhouse. "Plant Design and Economics for Chemical Engineers," McGraw Hill, New York, N.Y., 2002.
4. Sinnott and Towler, R.K., "Chemical Engineering Design," Vol. 6, Butterworth-Heinemann, Oxford, U.K., 2005.

Author



Sean Moran is principal consultant of Expertise Limited (Email: sean.moran@expertise-limited.co.uk; Phone: +44 1629 826482) and a former associate professor of chemical and environmental engineering and coordinator of design teaching at the University of Nottingham. Moran has twenty four years of experience in professional practice, designing, pricing, troubleshooting and commissioning water and effluent-treatment plants.

Moran is the author of "An Applied Guide to Process and Plant Design," a book published by Butterworth Heinemann in 2015.

Point-Level Switches for Safety Systems

Industries that manufacture or store potentially hazardous materials need to employ point-level switches to protect people and the environment from spills



Bill Sholette
Endress + Hauser

IN BRIEF

THE NEED FOR POINT
LEVEL SWITCHES

THE NEED FOR TESTING

TYPES OF POINT-LEVEL
SWITCHES

SUMMARY

Safety is an important and common subject of discussion in the chemical process industries (CPI) today. Conversations on safety include many topics, such as risk assessment, risk mitigation, and tolerable risk. Acronyms like SIS (safety instrumented systems), SIL (safety integrity level) and PFD (probability of failure on demand) and others have become part of the safety lexicon in CPI facilities throughout North America and the world. All of these terms and acronyms can be confusing, complicating what steps need to be taken to make a facility safe.

Regardless of how the safety concepts are labeled, there are a few principles that form the basis for all safety models. Whether you subscribe completely to the SIS concept or have developed your own safety procedures internally, risk assessment and risk mitigation are the two key concepts in any safety

FIGURE 1. Preventing overfilling of chemical storage tanks requires proper selection of high-high point-level switches

model. Determining what may go wrong and then taking steps to reduce the possibility by adding safety procedures, retention dikes, safety instrumentation and so on, are universal to any safety program.

The following are assessments of point level switches as they are used in overfill prevention safety programs. We review some basic concepts and look at some of the common technologies used to prevent overfilling of vessels (Figure 1). The positive and negative aspects of each technology are also considered.

The need for point-level switches

Point-level switches are often used in applications designed to prevent accidents. Industries that manufacture or store materials that are potentially hazardous employ point-

level switches to protect people and the environment. These industries include oil-and-gas, chemical and petrochemical manufacturing. Some examples of where these safety switches are used include overfill and spill prevention on tanks, retention dike level alarms, and seal pot low-level indication. These critical safety applications require careful consideration to make certain the best technology is provided for the given application. Technologies that are robust with few or no moving parts are preferred. Additionally, a procedure for testing the integrity of the switch is critical.

Providing safe and reliable facilities is a moral and financial responsibility. Accidents such as Buncefield 2005, Texas City petroleum refinery 2005, and the Elk River spill 2014 can and must be avoided. By providing safety systems and instruments to prevent or mitigate accidental spills and releases, we protect against injury to people, damage to equipment, environmental damage, and ensure that the availability of the process is maintained.

Due to the nature of the safety requirement for point-level switches, they are typically placed in a position where they may never be used. That is, for example, a switch for high-level overfill prevention is located above the highest point the level should ever reach. These switches are often called high-high level because they are above the stop-fill high-level instrument in the vessel (Figure 2). These high-high switches may go for years without ever having the level reach them because reaching the high-high switch is an accidental occurrence or noncompliant condition.

The need for testing

Because of this, it is imperative that the safety switch has a means of testing on a regular basis to ensure it will operate in the event of an actual emergency. This test must exercise the entire switch — not just the contact closure or output — to expose any potential failures, and should not require raising the product level to the switch point. Raising the level up to a high-high switch for test purposes

can potentially cause a spill and therefore is considered bad practice. Raising the product level to test the high-high switch is also specifically not permitted per API 2350 (American Petrochemical Institute) recommended practices for above-ground storage tanks. API 2350 states that high-high level switches must be tested on a regular basis without raising the level to a dangerously high condition.

Depending on the type of point-level switch being used, the only accepted method to ensure the performance of the switch may be to remove it from the vessel for testing. Removing a switch for testing incurs cost through downtime and lost production, as well as the time and expense for personnel to remove the switch, perform the test and reinstall the switch. There is also the concern that the switch could be damaged during removal and reinstallation, or that the switch is not reinstalled correctly. Either of these scenarios would negate the test and the switch failure may not be detected. For these reasons, employing a point-level switch that can be tested in-situ (Figure 3) should be the first choice for safety applications.

Testing the switch exercises the point-level switch and may bring to light any potential failures. The intent is to validate the switch, with the goal being to return the switch as close as possible to its original installed condition. That is, the switch should be validated to “new” condition or as close as is reasonably possible. Conceptually, this refers to probability of failure on demand (PFD). When a point level switch is first installed, it has a low PFD. Over time the PFD of the switch increases. Testing the switch re-establishes the PFD to a lower number.

A good analogy of the PFD concept would be the purchase of a brand new car. You park the car in your driveway and retire for the evening. The next morning you get up and go to start your car. The expectation is that the car will start. This represents a low PFD. Now, leave that same car in your driveway for a year without starting it or perform-

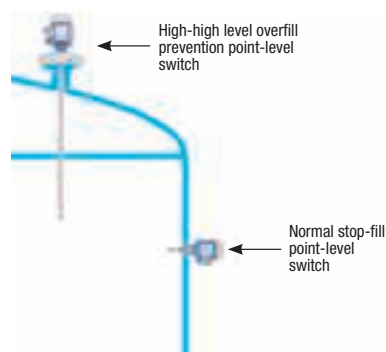


FIGURE 2. Located above the normal stop-fill control, high-high level switches may go for years without seeing the liquid in the vessel

ing any maintenance. Trying to start that car after a year may be difficult. This represents a higher PFD. PFD increases with time. Testing provides a way to return to a lower PFD.

Generally speaking, in-situ testing (testing with the unit installed in the process) may only validate a percentage of the potential failures. This is known as a partial proof test. As such, the PFD recovery is dependent on the proof test coverage (PTC). The PTC is based on the percentage of failures exercised by the proof test. The higher the PTC percentage, the higher the recovery, and the result is a lower PFD. Since the partial proof test recovers a percentage of the PFD, it does not return to the entire original installed state. The result is that with each partial proof test, the PFD will be a little higher after each test. To correct for this “drift,” a full proof test will be required after a determined number of partial proof tests. A full proof test will typically require removing the switch from the process for testing. Clearly, a level switch product with a high PTC will allow for a longer period of in-situ partial proof testing resulting in savings and process availability.

Types of point-level switches

There are many point technologies available that can be used for level indication. Because of the critical nature of safety switches, some technologies are better suited than others for this task. Let’s take a look at some of these technologies and why they may or may not be good choices for safety applications.

Float point-level switch. Float



FIGURE 3. The ability to test in-situ validates the functionality of the safety switch while reducing maintenance and downtime

switches, as the name implies, utilize a float that changes position due to buoyancy and indicates presence of a liquid. The float may move on a vertical shaft and trip a magnetically coupled reed switch or may pivot on an access providing a mechanical internal switch to activate. The appeal of float switches is that they are simple devices and relatively inexpensive. However, the mechanical nature of a float and the moving parts that can hang up or bind due to coatings makes them questionable for use in safety applications.

The ability to test a float switch is also suspect. Some manufacturers provide a lift arm to physically move the float to make it change state from normal to alarm. This test is insufficient to exercise potential failures, such as leaking floats, and may not identify binding or heavy coatings. Some test arms are fitted with magnets that will release if the float is heavy due to leakage or coating, but even this precaution is suspect. As such, the only true way to test the float switch is to remove it from the vessel for testing, or to raise the product level to the high-high switch, which, as previously discussed, is not permitted.

Floats are best suited for simple non-critical applications. Moving

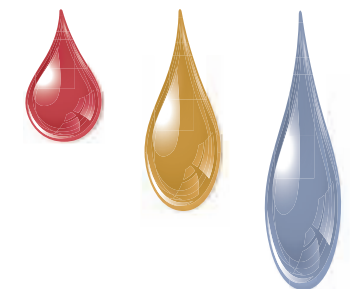
parts and the potential for a lack of buoyancy are critical failure points. From the standpoint of safety applications, floats should be avoided.

Ultrasonic gap point-level switch.

Ultrasonic gap switches are comprised of two piezoelectric crystals situated on opposite sides of a gap. One crystal is excited electrically and generates acoustic energy that is directed across the gap toward the second crystal. With air or gas in the gap, the energy is not strong enough to reach the second crystal. Once the gap fills with a liquid the acoustic energy is coupled through the liquid molecules, reaches the second crystal and completes the circuit, indicating that the liquid is present.

Ultrasonic gap switches have no moving parts to wear or hang up, which is an advantage over mechanical switches, such as floats. However, materials that leave coatings and materials that have suspended solids, or are aerated, will block the acoustic energy, causing a failure.

In-situ testing of ultrasonic gap switches that validate all potential failures is not possible. Some manufacturers provide test buttons that are used to test the switch. This test operates in one of two ways. In some products, there is a second set of crystals that are wired together.



PROVEN PERFORMANCE



ROTOFORM GRANULATION FOR PETROCHEMICALS AND OLEOCHEMICALS



High productivity solidification of products as different as resins, hot melts, waxes, fat chemicals and caprolactam has made Rotoform® the granulation system of choice for chemical processors the world over.

Whatever your solidification requirements, choose Rotoform for reliable, proven performance and a premium quality end product.

- High productivity – on-stream factor of 96%
- Proven Rotoform technology – nearly 2000 systems installed in 30+ years
- Complete process lines or retrofit of existing equipment
- Global service / spare parts supply



Sandvik Process Systems

Division of Sandvik Materials Technology Deutschland GmbH
Sallerstr. 35, 70736 Fellbach, Germany
Tel: +49 711 5105-0 · Fax: +49 711 5105-152
info.spds@sandvik.com

www.processsystems.sandvik.com

These two sets of crystals are used for the actual measurement, and when the test button is depressed, an acoustic frequency travels from one crystal through a wire to the second crystal, indicating a valid test. The assumption is that if the two test crystals operate properly, so will the measurement crystals.

The second approach to this test is to increase the frequency on the actual measuring crystal, which allows the acoustic energy to travel through the metal in the gap to the second crystal completing the circuit and validating the test. Neither of these tests addresses one of the most common failures in ultrasonic gap switches — namely, coating or plugging of the gap itself. Coatings in the gap or material plugging the gap will prevent the acoustic energy from crossing the gap and indicating when the liquid is present.

A second common problem with gap switches is dis-bonding of the crystal. The dual-crystal design will not detect this failure. The second design may detect dis-bonding, but increasing the frequency could provide a valid test while the switch may fail to operate at its normal frequency. Also, neither of these test methods will detect potential failures due to liquids with suspended solids or aeration.

Performing a valid test on an ultrasonic gap switch requires removing it from the vessel and testing it in a sample of the material from the vessel. For these reasons, ultrasonic gap switches are best suited for general, non-critical level applications. They should not be used for high-high safety and spill-prevention applications.

Capacitance point-level switch. Capacitance point-level switches are based on a capacitor. A capacitor is made of two conductive plates separated by a dielectric insulator. The capacity of the capacitor is based on the size of the plates, the distance between the plates, and the dielectric constant of the insulating material between them. In a capacitance point-level switch, one plate of the capacitor is the active center rod of the sensing element; the second plate of the capacitor is the vessel



FIGURE 4. Vibronic point-level switches (left) are an active technology with constant self-check function built-in (right) to ensure functional integrity

wall or an added ground rod or plate. As the material in the vessel rises, it covers the sensing element and the capacitance increases. The output of the electronic unit changes state to indicate presence of material once the capacitance exceeds a preset switch point.

Capacitance point-level switches have several advantages over previously discussed technologies. There are no moving parts to wear or hang up. Internal diagnostics monitor data, such as the base capacitance. Reduction of the base capacitance would indicate a wiring failure or a sensing element that has lost mass due to damage or corrosion. Failures can result in a switch going into fault mode or activating an “alarm” contact.

One disadvantage to capacitance switches is that they require calibration. Initially, the base capacitance needs to be balanced, and then an additional set-point capacitance is added. There are capacitance switches that “calibrate” themselves. These switches follow the same procedure as manual calibration with the exception that it is done internally in the electronic unit. If the calibration is not performed correctly it is possible that the switch will not respond to increasing material level in the vessel.

There are products available that incorporate testing features so in-situ testing can be performed to ensure the functionality of the switch. The PTC percentage for a capacitance-switch partial proof test tends to be low. The result is that the intervals between a required full proof test tend to be fairly short, increasing downtime and maintenance.

Depending on the application

requirement, a capacitance point-level switch may be the best choice for a safety installation. This is particularly true of applications involving extremely viscous materials that coat sensing elements heavily. It is important to make sure the capacitance switch selected provides active coating-rejection technology to compensate for the coatings.

Vibronic (tuning fork) point-level switch for liquids. Vibronic point-level switches, also called tuning forks, operate by vibrating the fork at a resonant frequency in the uncovered state. When process material covers the fork it causes the frequency to shift down, indicating the presence of the liquid and changing the output of the switch.

There are a number of advantages to vibronic switches (Figure 4). First, vibronic switches are an active technology. Because they are constantly vibrating, additional diagnostics are possible. The frequency of the fork is monitored to determine the covered or uncovered state. But changes in frequency can also indicate damage or corrosion to the fork, heavy coatings, and objects jammed between the forks. Any of these conditions will result in a fault output. The electronic unit is constantly running self-test routines to identify these and other potential faults.

Some manufacturers have developed additional functions to ensure the operation of the switch in safety systems. One such function is to provide a live signal superimposed on the current signal (Figure 5). This live signal is constantly switching from one current to another and back. This switching current certifies that the current signal is not stuck

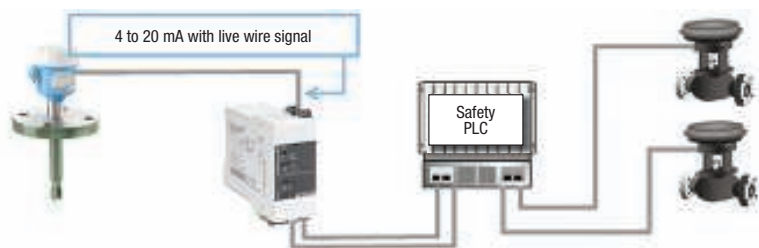


FIGURE 5. Vibronic tuning forks with continuous live signal provide the highest in reliability and maximum in-situ proof test coverage

and ensures that the current will shift when the fork changes from the uncovered to covered state.

Vibronic point-level switches have no moving parts to hang up or wear out. Additionally, there is no calibration required so you can be sure the switch is set up properly.

Another advantage to vibronic point-level switches is the ability to perform in-situ partial proof tests. The sophistication in design of these switches employs redundant circuitry along with the diagnostic capability previously discussed. These features added together result in an extremely high proof-test-coverage percentage. The high PTC provides the ability to test in-situ for an extended period of years without having to perform a full proof test. Some manufacturers provide products that will not require a full proof test for as many as twelve years, greatly reducing testing cost and ensuring process availability.

Continuous technologies. Some plants rely on continuous level technologies, such as free-space radar, guided radar or ultrasonics, to provide for overfill prevention or function as a point-level device. Their thought process is that with a continuous level technology, they would know if something was wrong with the transmitter, because they have a continuous output. In reality, it is possible that upset conditions in the process, such as foam, condensation and buildup, can lock up the signal to a false value. It should also be noted that API 2350 states that instruments used to prevent accidental overfilling and spills must be separate from the instruments used for tank-gauging the vessel.

A recent trend in overfill prevention has been to use two continuous level transmitters in redundancy. The

concept is to poll the two transmitters and to shut down the process if the level reaches a preset high-high value, or if the two transmitters differ by a predetermined percentage. As in the previously mentioned use of continuous level for overfill prevention, the thought is that the continuous signal provides a measure of security that a point-level switch cannot offer. However, there are a few concerns with this approach.

First, as in the previous example, it is possible for a process condition such as foam, condensation, or buildup to cause a signal to lock. Using two different technologies in redundancy may provide an advantage in that a process condition that causes one technology to fail may not affect the other. Using two different technologies can introduce other problems. An example would be the accuracy of guided-wave radar may be different than a differential pressure transmitter under the same process conditions. The difference in output, while typically negligible, is often hard for operators to overlook. There is still the issue with API 2350 recommended practices.

If the overfill prevention transmitter needs to be separate from the tank gauging transmitter, which continuous level transmitter is which? This is certainly a grey area, since they both are outputting continuous level and a high-high trip point. Last, it is clear that a high-high point-level switch is the most reliable and simple device for overfill requirements. The availability of point-level switches with current output and live signals provides the same assurance as the continuous level transmitter that the switch is operating as required.

Using a point-level switch for high-high indication is recognized as a

“best practice” and should be followed for safety overfill applications. The reliability of a point-level switch with continuous live signal will exceed other technologies in demanding critical services. As always, the application will determine the best technology for safety devices.

Summary

There are many point-level switches available in the market today. We have reviewed some of the most common types in this article. As we have discussed, some technologies are better suited for safety systems than others. Technologies with moving parts and those that cannot be easily tested are best suited for non-critical level applications.

Trends toward using continuous level transmitters for overfill prevention on the surface have some appealing merits. However, the advantages of using a separate point-level switch with live signal are clear and continue to provide a “best practice” solution to overfill prevention.

From an overall standpoint of sophisticated diagnostics and ease of commissioning with no calibration, vibronic point-level switches are excellent choices for safety systems. The extremely high proof-test coverage and long intervals between full proof-test requirements result in the highest cost savings and plant availability. From these standpoints, vibronic point-level switches are the clear choice for most safety-system applications. ■

Edited by Gerald Ondrey

Author



Bill Sholette is the Northeast region level product manager at Endress + Hauser (2350 Endress Place, Greenwood, IN 46143; Phone: 888-363-7377; Fax: 317-535-2171; Email: bill.sholette@us.endress.com). He has spent the last 36 years consulting and specifying on level-measurement instrumentation. Sholette received

his certification in management and marketing from Villanova University. He previously worked for Ametek, where he began his career in sales as a regional sales manager. Later, he moved on to work at Drexelbrook Engineering as a product manager. In 2012, Sholette came to work for Endress+Hauser as the Level Products business manager for the Northeast region. In this role, he is responsible for technology application and development of level products. He has also published a number of white papers and articles pertaining to level measurement.

Chemical Process Plants: Plan for Revamps

Follow this guidance to make the most of engineering upgrades that are designed to improve plant operations or boost throughput capacity

Koya Venkata Reddy

FACT Engineering and Design Organization

The chemical process industries (CPI) are functioning in an era of globalization, and between the prevailing economic conditions and upheavals in the energy sector, the number of new investments in CPI facilities has fallen in recent years. Many industries are seeking cost reductions by revamping existing plants with minimum investment. The objective is to reduce the cost of production through the use of upgrades and new technologies, to remain competitive in the market. By way of example, if one wants to set up a new complex to produce ammonia and urea, the specific capital cost will be on the order of \$666/ton of urea. By comparison, if an existing plant is revamped to raise the existing production from 100% to 120% (that is, adding 20% additional capacity), this can be done at an expenditure that is closer to \$300/ton to achieve this incremental production

This article reviews key concepts, objectives and procedures that are needed to successfully carry out various types of CPI plant revamps.

The need for revamps

Chemical process plant revamps are typically undertaken for the following reasons:

- To change in feedstock composition
 - To adopt energy-conserving processes in light of increasing energy costs
 - To reduce the fixed-cost components of production, by increasing capacity within the existing facility
 - To extend the life of a well-maintained process plant
- Similarly, there are many benefits to conducting an appropriate plant revamp. These include the ability to:
- Increase the reliability of equipment, leading to reduced downtime and maintenance costs
 - Reduce energy consumption
 - Extend useful plant life
 - Reduce the cost of production, thereby improving the overall bottom line for the facility

However, experience shows that inefficient implementation of proposed revamp options can lead to failure, so care must be taken to avoid this by building the right team of experts. This team typically includes representatives of the process licensor company, engineering and project-management consultants, and experts from the owner company representing diverse fields, such as operations, project management and maintenance. If sufficient expertise for the proposed revamp is not available internally, one can hire consultants to carry out the feasibility studies and implementation of the revamp on

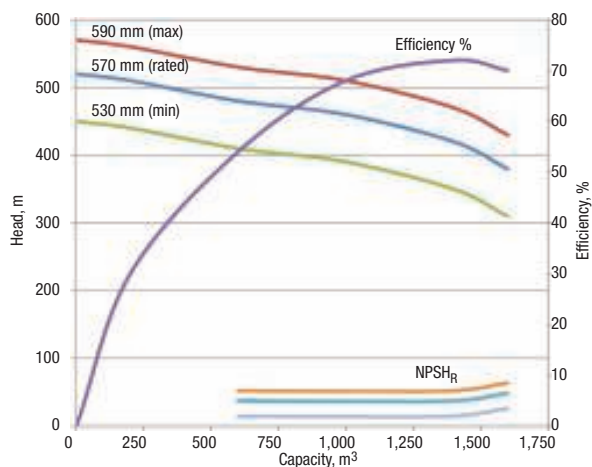


FIGURE 1. Shown here are typical pump characteristic curves, with three different impeller sizes, showing capacity versus head, and NPSH_R versus capacity

a turnkey basis. Meticulous planning related to the hook-up of tie-in points arising out of expansion schemes can help to reduce the amount of downtime required to execute the revamp schemes and put the plant back online.

Targeted revamp capacity, change in process

In general, it is possible to increase the rated capacity of a plant by 10%, with very little added expenditure. But to increase capacity by 20–50% over the nameplate capacity, substantial modifications must be taken into consideration that often involve implementing different technologies from the ones already applied in the existing plant. When seeking such notable increases in production capacity, plant operators and managers must not only verify the soundness of the economics, but also carefully evaluate the potential drawbacks, if any.

Sometimes the existing process path may have to be changed to enhance the capacity of the plant, since the current process may not yield the desired efficiency or conversion rates. Two cases are discussed below.

Example 1. In the case of units to recover liquefied petroleum gas (LPG) from natural gas, such units are designed for a certain composition of feed gas. The need for a revamp often arises if the gas composition has changed and the expected recovery of C₃/C₄ and higher compounds has become unprofitable. In this case, the expected recovery of LPG and natural gas liquids (NGLs) can be achieved by compressing the feedstock to higher pressures than present levels, or by spiking heavier NGLs back to the feed gas stream. Thus, such a revamp re-

quires a study to assess the technical and economic feasibility of the different process paths being considered.

Example 2. A feedstock change from naphtha to natural gas in ammonia plants, hydrogen plants and methanol plants also necessitates a need for revamp of the reformer section and front end, but in many cases, the existing process path can be retained. In this case, the absorbed duty of the reformer — which tends to be the major energy-consuming equipment found in the system — and the burner duties required vis-a-vis the required reformer absorbed duty are calculated to check their suitability. The maximum skin temperature of the reformer tubes for the feedstock change must be checked.

In all cases, the existing process path, along with other options, must be studied in detail to arrive at the most economical and technically feasible revamp option.

Lifecycle of the plant

The different phases of a plant's lifecycle must be taken into consideration when planning a revamp. Such phases include the following:

1. *Incubation stage* — Initial stabilization period
2. *Growth stage* — Optimization and debottlenecking of operations to improve the efficiency
3. *Maturity stage* — Attainment of stable operation
4. *Declining stage* — Realization that plant capacity is not sustainable because of frequent equipment failures or excessive maintenance requirements

Revamping the plant during Phases 1, 2 or 3 is relatively easy, whereas revamping a plant during Phase 4, when the facility is already in decline, requires the engineering team to adapt many of the modern technology options to an aging infrastructure, and to replace many equipment components.

Objectives of a revamp

The objectives of a plant revamp should be spelled out prior to studying the options. Possible objectives could be the following:

- Enhance capacity from the present operating level to expand capacity to, say, 110%, 120%, 130% of rated capacity
- Reduce production costs
- Reduce pollution
- Reduce the consumption ratios of various raw materials and utilities
- Reduce maintenance costs and increase the onstream factor
- Upgrade the technology to keep pace with the new developments, and to increase the plant life
- Minimize plant shutdown

These objectives can be achieved by maximizing efficiency, yield and conversion of raw materials in various sections. Specifically, plant revamps are often implemented to improve process optimization, increase energy conservation, improve product quality and expand capacity.

Key revamp procedures

Every revamp project should start by identifying the goals and actual bottlenecks. A material-and-energy balance for the base case should be developed to reflect the actual operating conditions. The consumption of various

raw materials, utilities and energy per unit of production are tabulated. The material-and-energy balance of the existing operation, and the required revamp plant load, are prepared.

The existing equipment components are rated for the revamp conditions, and then changes and required new equipment are identified. Cost estimates of various schemes are prepared (after consultation with various vendors). Feasibility studies, followed by detailed project reports (DPR), are also prepared. The potential rates of return of various options are studied. The best option available (on the grounds of economic sustainability and technical feasibility) is then selected, so that the basic engineering design package (BEDP) can be prepared, and the revamp project implemented.

As noted, successful revamps require assembling the right revamp team. Typically, such a team consists of individuals from the process licensor company, consultants for basic engineering and detailed engineering services, contractors for specific electrical-, mechanical- and instrumentation-related aspects of the project, and various engineers from the owner's group (for instance, those who represent specific disciplines and have a concrete understanding of the current operation).

The following planning steps should be undertaken:

1. Estimate the plant's inherent capacity from past and recent data. This can be done by identifying weak areas in the plant (for instance, those that are contributing to non-realization of rated or required plant capacity), or by conducting an end-to-end survey of the plant. Once such a study is carried out, efforts should be made to predict the potential performance improvements of the plant if the weak areas are rectified.
2. Prepare the process scheme and the equipment data sheets. Carry out feasibility studies of all options (including both technical and financial aspects of the proposed revamps) and then develop the detailed project report. Set the target of the revamp in terms of time (schedule) and cost.
3. Implement the approved revamp. Ideally, the revamp activities should be carried out during the annual scheduled turnaround period for the plant, to minimize unscheduled downtime.

Estimate plant capacity

Many older CPI plants can run at or above the rated capacity continuously for a week or a month. But due to certain operating limitations, and downtime that may arise from some underperforming equipment, the annual rated capacity is seldom achieved. Analyzing past operating data on a monthly basis (for the past 10 years or so) will reveal which equipment components are most often to blame for downtime, and are thus affecting overall capacity utilization. Such a study of past data is often called a weak-area analysis. Similarly, sometimes an end-to-end survey of the plant (from the plant commissioning to the present day) is also conducted.

Existing equipment poses both opportunities (in the form of underutilized capabilities) and challenges (in terms of limitations). The ability to identify problem areas can help the team to prioritize their debottlenecking efforts in order to improve capacity utilization more quickly.

The weak-area analysis

Understanding current operation is very important for the successful revamp of a plant. The plant performance can be evaluated based on the performance data for the past 10 years, if the plants are relatively old. Otherwise the plant performance is studied from the beginning to the present day (using the end-to-end survey).

Two indices, the plant load factor (PLF), and the on-stream factor (OSF), are important to scientifically evaluate the plant performance.

$$PLF = \frac{\text{Actual production} \times 100}{(\text{Actual stream days}) \times (\text{Daily rated capacity})} \quad (1)$$

$$OSF = \frac{\text{Actual stream days} \times 100}{\text{Annual design on stream days}} \quad (2)$$

$$\text{Overall capacity utilization} = \frac{PLF \times OSF}{100} \quad (3)$$

$$= \frac{\text{Actual annual production} \times 100}{\text{Annual design onstream days} \times \text{daily rated capacity}} \quad (4)$$

The performance of the plant is studied based on the highest PLF and OSF, on both a yearly and monthly basis. Data on the highest daily production that is achieved with the present hardware should also be captured.

In addition to the past production performance of the units, a breakdown of individual equipment must be assessed to identify the weak areas and arrive at the predicted performance in the post-revamp implementation scenario. The best yearly, monthly and daily performance must be considered in order to find the target capacity of the plant and identify the number of stream days that this target capacity is likely to achieve.

Analysis of historic downtime factors can also provide insight. To assess the feasibility of the plant operating at higher capacity, the best-achieved PLF (on a monthly basis), and the highest load achieved, should be considered.

In any process plant, onstream days are lost due to various factors — including process problems, mechanical breakdown of equipment, raw material shortages, planned shutdowns, finished product sales, effluent treatment and byproduct sales (if any). Such lost days — which contribute to a loss of overall capacity utilization — should be tabulated, and the associated causative factors noted and tabulated.

From the weak-area analysis, one can estimate the inherent capacity potential of the plant and identify individual equipment components or sections that are becoming a bottleneck to maximum capacity utilization. Sometimes the plant capacity is affected by external circumstances, such as feedstock supply issues (for instance, urea plant capacity is impacted by the capacity of upstream ammonia plants) utility supplies and more.

Dividing these factors into recurring and non-recurring factors will also provide insight into the priorities needed to address the problem.

TABLE 1. A TYPICAL CALCULATION OF C_v BEFORE AND AFTER A REVAMP

	Unit	Before	After
Flowrate	m ³ /h	80	100
Density	kg/m ³	950	950
P	kPa	49.03	49.03
P	kg/cm ²	0.5	0.5
N_f	unitless	0.0865	0.0865
C_v	unitless	128.73	160.92
Control valve size	in.	4	6
Pipeline size	in.	6	6

- *Internal reasons: Recurring.* Examples include process problems, mechanical breakdown of equipment, planned shutdowns and more
- *Internal reasons: Non-recurring.* Examples include lack of finished product sales, effluent treatment, lack of byproduct sales and more
- *External reasons: Recurring.* Examples include utility failure, raw-material shortages and more
- *External reasons: Non-recurring.* Examples include worker strikes, natural calamities and more

FFS and RLA analysis

In a chemical process plant, critical equipment and piping must be evaluated for their fitness for service (FFS), according to API 579 [1], and their potential residual life analysis (RLA) must also be assessed. The API 579 guidelines are designed to ensure that pressurized critical equipment are operated safely. The ability to establish the minimum years of residual life of the critical equipment is essential to justify the revamp of the old and well-maintained plants.

Use of simulation software

Simulation software can play an important role during the evaluation of potential revamp options, so its use is recommended to study the competing process-revamp options. Such modeling can help the team to substantially reduce the time needed to study the technical feasibility of revamp options. However, great care must be taken to ensure the use of most appropriate thermodynamic modeling options that are suitable for the plant and its components, fluid properties, process conditions and so on; otherwise the results can be wrong. Appropriate use of simulation software can reduce the time required to carry out the revamp projects, and help the team to identify an optimized, cost-effective process path, based on an evaluation of proposed process sequence changes given the various constraints.

The various revamp options are studied from a technical and financial point of view, a suitable process path is selected and the equipment that create a bottleneck for the desired revamp option are identified. Once the additional equipment and piping are identified (per the proposed expansion schemes), the required hookup points and tie-in connections must be identified. As noted, to reduce the impact of these hookups, they should — wherever possible — be undertaken in conjunction with short shutdowns that are planned for preventive maintenance.

Environmental and safety impacts

Environmental-impact assessment studies should be conducted during the conceptual stage to evaluate the positive and negative impacts of the proposed engineering changes on the environment, and to arrive at the solutions to mitigate the adverse impacts, if any.

Safety is always a paramount consideration. The team must ensure that the proposed plant revamp, and all revised process schemes, conform to the latest codes and safety norms. Hazard operability (Hazop) studies of the process schemes during the basic engineering-design package stage, front-end engineering-design stage, and the detailed engineering stage should be conducted. During the implementation stage, periodic technical audits should be conducted to see that the construction is progressing according to design intentions.

Hazardous-area classification drawings of the plant are developed, and existing electrical considerations and other instruments are evaluated and changed according to the modified hazardous area classification of the plant. Quantitative risk analysis (QRA) is also conducted to submit to the statutory authorities, and any onsite and offsite emergency plans must be revised, as needed.

Similarly, a safety integrity level (SIL) analysis should also be conducted according to BS IEC 61511[3] and BS IEC 61508 [4]. And, all safety-instrumented functions (SIF) of the instruments are to be SIL 2 (minimum).

Debottlenecking individual equipment systems

Different strategies are available to debottleneck different equipment components and systems. Some examples are discussed below:

Trayed columns. The design data of the distillation column should be studied, preferably using process simulation software. The column is simulated for both the existing operating conditions, and for desired higher throughput or changed feed composition. The liquid and vapor rates for each tray, along with their physical properties, are obtained. After obtaining the column profile and liquid-vapor-traffic details in the column, the tray hydraulics are calculated and suitable recommendations are made, regarding changes made to the weir height, the number of holes, pitch, the diameter of the holes (considering the flooding conditions) and more. Tray vendors should be contacted when considering revamping the distillation column trays. The team should ensure that the reboiler and condenser are rated for the maximum throughput expected.

Many advanced separation technologies that are available today allow for higher-capacity trays to be retrofitted into distillation columns. Similarly, the suitability of advanced structured packings can also be considered when planning a revamp of distillation columns in petroleum refinery and other critical CPI applications. Many present-day structured packings can help revamped columns to improve capacity by 40–50%, while reducing pressure drop across the column.

Packed columns. In the late 1980s, Raschig rings were popular in chemical process operations. A study of pressure drop of the packed column at the rated capacity should be carried out to determine the pressure drop per foot of packed column. Such a study should also identify

TABLE 2. TYPICAL DESIGN VELOCITIES OF FLUIDS IN CPI PIPELINES

Type of line	Allowable velocity (max), m/s
Suction lines for the pump	1
Discharge lines for the pump	2–3
Fire water	5
Gravity lines	0.6–0.7
Low-pressure gas	20
High-pressure gas	15
Low-pressure steam	20
High-pressure steam	15

the percent flooding velocity with the revamped throughput. If the flooding velocity is greater than 80%, the packings are replaced with ones that offer lower packing factors and higher surface area per specified volume. However, adequate wetting of the packing must be ensured, according to design guidelines, and circulation rates of liquids must be enhanced accordingly, if needed.

Packed towers that contain ceramic packings have a tendency to flood at lower gas velocities. Hence, in some cases, such packings may be replaced with steel packings (after conducting the technical suitability check) to help reduce the flooding velocity and increase throughput.

Pumps. Pumps are very important and often provide a relatively simple revamp opportunity, to take advantage of advancements in pump technology. The throughput required at desired plant capacity is determined, and the characteristic head-versus-capacity curves, required net positive suction head (NPSH), and other key characteristics should be studied. Normally, pump manufacturers indicate three impellers (minimum, normal, maximum) that are suitable for any duty. The possibility of using a larger-sized impeller diameter should be studied, considering the head and capacity requirements (Figure 1).

As the pump capacity increases, required NPSH ($NPSH_R$) increases. Hence, the available NPSH ($NPSH_A$) should be checked, to avoid cavitation of the pump at higher flows. The motor's suitability should also be verified. Many successful revamps were carried out by changing the impellers to those with larger diameters. The team should also carry out a design check to ensure that the piping material classification is still suitable for the pump's discharge piping.

Instruments. Instruments such as flowmeters (orifice, venturi and mass flowmeters), pressure indicators, temperature transmitters, level instruments and so on should be rated and studied in detail for the proposed changed condition. Since orifice meters often give rise to higher pressure drop, they may be replaced with mass flowmeters. Similarly, level instruments based on differential pressure can be replaced with non-contact type, radar-type level instruments, which tend to be more accurate.

Normally, the orifice plates in flowmeters are maintained with β ratios — that is, the ratio of orifice plate bore diameter (d) to pipeline diameter (D) — of 0.3 (minimum) to 0.7 (maximum). The orifice meters are rated for the target throughput and the pressure drop across the orifice element is determined. If the pressure drop is too high, the orifice plates are changed to those of higher β ratios,

to address the pressure drop issue without changing the transmitter. To keep the β ratio less than 0.7 for a given pressure drop across primary element, either or both the orifice plate and the transmitter is changed.

Control valves. The flow through a control valve depends on its capacity, or so-called C_V value (Equation 5), which is defined as the flowrate in m^3/h of water at a temperature of 60°F with a pressure drop across the valve of 1 psi. The rule-of-thumb rule is that the C_V is roughly $10D^2$ (where D is the size of the control valve in inches). For example, the C_V of a 2-in. control valve is roughly 40. The C_V value is recalculated according to ISA 75.01.01[2] with the new flowrate, inlet pressure and allowable pressure drop.

Normally, the control valves in the original design of the plant are kept one size lower than the pipe line diameter, and their rated flow is specified as 1.7 times the normal target flow, or 1.3 times the maximum target flowrate. Since the flowrate is specified as 70% higher normal flowrate, or 30% higher maximum flowrate, the control valves will be suitable to handle the revamped target flow, which is 20–30% more than the design flowrate. Hence, for a proposed 20–30% plant load increase, the existing control valve will normally be sufficient. If the C_V of the control valve is not sufficient, the team may consider either changing the trim of the control valve, or installing one with a higher C_V . Equation 5 is used to calculate the C_V .

$$C_V = \frac{Q}{N_1} \sqrt{\frac{\rho_1 / \rho_0}{\Delta P}} \quad (5)$$

Where:

Q = the flowrate through the control valve, m^3/h

N_1 = a constant (8.65×10^{-2}), from ISA 75.01.01-2007 (IEC 60534-2-1 Mod), Table 1 [2]

ρ_1 = density of the fluid, kg/m^3

ρ_0 = density of the water at 15°C, kg/m^3

ΔP = differential pressure, kPa

Table 1 shows a typical calculation of C_V before and after revamp flowrates, and shows how the existing control valve must be changed to the pipeline size for a 20% increase in flowrate.

Control valves should also be checked for noise levels. Controllability and rangeability are also important for revamping the valve. Revamps involving control valves should always involve vendor cooperation. If the revamp is not able to bring the process into the controllability range, either the valve should be replaced with one of higher size, or fine feed-control valve can be added parallel to the existing control valves.

Heat exchangers. The existing heat exchangers should be checked for any excess available surface area, by rating them using standard software modeling packages. In general, an existing heat exchanger provides enhanced heat exchanging capacity if the pressure drop across the tube side or shell side is increased.

If the heat exchanger is downstream of a pump, the team should consider increasing pump head, which would increase the allowable pressure drop across the heat exchanger. There may be a tradeoff between the operating cost of the pump and fixed cost associated

TABLE 3. ALLOWABLE PRESSURE AND TEMPERATURE RATINGS, PER [7]

Flange rating, per ANSI B16.5	Allowable pressure (max) kg/cm^2	Allowable temperature (max)
150 class	18.3	93.3°C / 200°F
300 class#	47.8	93.3°C / 200°F

with changing the heat exchanger. Also, increasing the number of baffles on the shell side to increase the heat transfer coefficient should be considered. In the case of plate heat exchangers, additional plates can be added to increase the heat transfer, in consultation with original equipment manufacturer.

Limitation in line sizes. All of the line sizes are checked using the standard velocity criterion. Typical standard velocity criteria are shown in Table 2.

The lines are checked for pressure drop. In case the line pressure drop is high, the lines are changed to provide larger-diameter pipes. Special attention must be given for gravity-flow lines, as the allowable velocity is in the range of 0.6–0.7 m/s and sufficient slope must be ensured.

The piping material thickness (according to ANSI B 31.3) and flange ratings (ANSI B16.5) are checked to be sure they comply with higher pressure. In some cases, the flange rating will be sufficient, as there is often a wide margin available, as shown in Table 3.

Thus, if a line that was designed for 10 kg/cm^2 is going to experience a pressure of 12 kg/cm^2 at 90°C, then the flange rating of 150# need not be changed. However, the actual pipe thickness should be measured and checked for its suitability in the revamped design pressure condition. Sometimes no piping needs to be changed — for instance, if the design pressure in the revamped condition is less than that of the original process. One example is an ammonia synthesis section, where pressures have come down from 200 kg/cm^2 to 140 kg/cm^2 .

Pressure safety valve (PSVs). When the plant runs at higher revamped capacity, all of the PSVs must be checked according to API 520 [5]. The team must evaluate the nozzle area suitability and the rating of the inlet and outlet piping, after recalculating the fluid-relieving rates associated with the new throughput. PSVs are changed if they are found to be unsuitable. In the case of feedstock changeover, PSVs must be also be checked for changes in fluid properties such as molecular weight, compressibility factors and so on.

Compressors. Various options for revamping the compressors should be studied initially. Various revamp options include the following:

1. Installation of a suction booster
2. Installation of a parallel compressor
3. Changing internals in the low-pressure and high-pressure casing, along with steam turbine upgrading
4. Providing a chiller at the suction inlet and changing the intercoolers. A chiller can be installed to reduce the gas temperature and increase the volumetric capacity of the gas and reduces the power requirement. In cases where the drive needs to be changed, this can be applied.
5. Change of compressor type. In older-generation urea plants, urea reactors operated at 200 kg/cm^2 , and they fed the CO_2 to the urea reactor; Historically, CO_2

compressors have been reciprocating-type, which incur high energy costs. As the pressures in present-day urea reactors have come down to 135 kg/cm², centrifugal compressors can be used instead, which helps to reduce operating costs as well as maintenance costs).

Effluent treatment plants (ETP). Worldwide, wastewater-treatment plants are typically designed with high safety margins, to cater to shock loading or sudden peak loading of effluents containing high chemical oxygen demand (COD). However, when a plant is stabilized and optimized, the generation of wastewater containing high COD is drastically reduced.

The following methodology should be adopted while checking the capacity of ETP that are based on an activated sludge process during revamp planning:

1. Evaluate existing facilities by collecting operating data for one month and developing a statistical analysis of various parameters.
2. Check the design basis and the design volume of the aeration basin, thickener and clarifier.
3. Evaluate the operating case using the above design basis.
4. Calculate the energy requirements of the design and operating cases, and quantify the potential for reduction of electrical energy at various loads.

Flares and knockout drums. Flare systems, including knockout drums, must be checked before embarking on a plant revamp. Flares are used to ensure plant safety, by flaring hydrocarbons in case of emergency conditions such as power outages, fire or blocked discharge.

While converting the ammonia plant from a liquid fuel (such as naphtha) to natural gas, the properties of the fluid (such as molecular weight, compressibility factor), viscosity and density undergo a drastic change and have profound effects on height, flare diameter and flare tip suitability. Calculations must be performed to verify the new case, according to API 521[6]. The goal is to see whether the existing flare is suitable to handle the changed load and fluid conditions associated with the proposed revamp. Vendor support should be sought, if needed, and the flare design can be checked using manual calculations, spreadsheet calculations and flare-specific computer software.

Reactors. Reactors are the heart of chemical process operations. Efforts should be made to maximize yield and conversion rates in the revamp scheme. If, following the reaction, raw materials remain unconverted, they must be separated and recycled back to the reactors. This consumes utilities, thereby increasing energy consumption. If conversion rates in the reaction are increased via a revamp, the recycle ratios will be drastically reduced.

In one urea plant, a revamp involved the following changes: Introduction of higher-capacity trays in the urea reactor in the ammonia plant; changing the converter baskets from axial- to radial-type in the ammonia converter in the caprolactam plant; using an enriched-oxygen supply to the cyclohexanone reactors with introduction of improved safety features. These changes were able to increase the conversion rate, increase overall production and decrease energy consumption.

In the ammonia plant's synthesis section, the synthe-

sis converter pressures were reduced to 135 kg/cm² (from an initial level of 200 kg/cm²), as a result of the introduction of radial basket converters instead of the older-generation axial converters. By retaining the same high-pressure converter shell, one can change the converter baskets to radial ones, which helps to reduce pressure drop.

Catalysts play a vital role in enhancing the reaction rate. The use of advanced catalysts should be considered, where possible. For example, in sulfuric acid plants, vanadium pentoxide (V₂O₅) is typically used as a catalyst. If an improved cesium catalyst is added to the reactor, the SO₂ to SO₃ conversion can be increased, and the emission of SO₂ can be reduced, generally to far below the statutory limits.

Storage tanks. If the process revamp is based on a "more in/more out" concept — that is, more fluids will be flowing into and out of storage tanks — then the team must check the capacity of "breather" valves and emergency vents according to API 2000 [8]. If the breather valves need to be replaced, the pressure settings may be adjusted in consultation with vendors, according to the applicable codes.

Utilities. During any plant revamp, the capacity of key plant utilities, such as demineralized water, instrument air, plant air, steam plants, power, and cooling tower should also be checked to be sure they will support the proposed revamp. Offsite facilities related to raw-materials receiving, tank farms, and product-storage capacities must also be studied and related personnel requirements must be ascertained. ■

Edited by Suzanne Shelley

References

1. American Petroleum Inst., API 579: Recommended Practice for Fitness for Service, 2nd Ed., July 2007.
2. Instrument Soc. of America, ISA 75.01.01-2007 (IEC 60534-2-1 Mod): Flow Equations for Sizing Control Valves, 2007.
3. International Electrotechnical Commission (IEC), BS IEC 61511: Functional Safety — Safety Instrumented Systems for the Process Industry, 2003.
4. International Electrotechnical Commission (IEC), BS IEC 61508: Standard for Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems, 2010.
5. American Petroleum Inst., API 520: Sizing, Selection and Installation of Pressure Relieving Devices, Part 1, 8th Ed., 2008, and Part 2, 5th Ed., 2003.
6. American Petroleum Inst., API 521: Pressure Relieving and Depressurizing Systems, 5th Ed., 2007.
7. ASME/ANSI B16.5: Pipe Flanges and Flanged Fittings, April 2013.
8. American Petroleum Inst., API 2000: Venting Atmospheric and Low Pressure Storage Tanks, 7th Ed., March 2014.

Author



Koya Venkata Reddy is senior manager, process engineering, at FACT Engineering & Design Organization (FEDO), a div. of Fertilizers and Chemicals Travancore Ltd. (FACT; Udyogamandal 683501, Kochi, Kerala, India; Phone: +91-484-2568763; Email: koyareddy@yahoo.com). He has 24 years of experience in chemical plant operations, including expertise in the fields of process control, process design, process risk analysis, Hazop analysis, process simulations, environmental management and plant revamps. He is a recipient of FACT's Merit Award. Reddy holds a Bachelor of Technology degree from Andhra University (Visakhapatnam) and a Master of Technology degree in project management from Cochin University of Science and Technology. He also received an M.B.A. in finance from Indira Gandhi National Open University (IGNOU; Delhi). He is a lifetime member of the Indian Inst. of Chemical Engineers (IChE) and a member of the Institution of Engineers (India).

Common Mistakes When Conducting a HAZOP and How to Avoid Them

An important part of ensuring the success of a HAZOP study is to understand the errors that can cause the team to lose focus

**Arturo Trujillo, Walter S. Kessler
and Robert Gaither**
Chilworth, a DEKRA Company

Since its inception in the 1960s and its first official publication in 1977, the Hazard and Operability Study (HAZOP) has become one of the most powerful tools for identifying process hazards in the chemical process industries (CPI). Utilizing systems that are qualitative or even simplified semi-quantitative, the HAZOP method has been increasingly used, not only as a tool for identifying process hazards, equipment deficiencies or failures and operability problems and assessing their risks, but also as a tool for prioritizing actions and recommendations for process-risk reduction. Reducing risk is especially important in ensuring the safety of the personnel who must work in the plant environment each day (Figure 1).

The HAZOP methodology is a systematic team-based technique that can be used to effectively identify and analyze the risks of potentially hazardous process operations. It is the most widely used process hazard analysis (PHA) technique in numerous industries worldwide, including petrochemicals, pharmaceuticals, oil-and-gas and nuclear, and is used during the design stages of new processes or projects, for major process modifications and for periodic review of existing operations.

A HAZOP is a time-consuming exercise and should be conducted in such a way to ensure that the results justify the effort. This article presents some common mistakes that can jeopardize a HAZOP team's task. Frequent or chronic occurrence of these mistakes indicates potential gaps in the site's process-management system. However, it is ultimately the responsibility of the HAZOP facilitator



FIGURE 1. HAZOP studies are useful tools in reducing process risk, and they provide safeguards against hazardous scenarios for the personnel who must maintain and operate the plant

to correct these mistakes if or when they occur during the course of the HAZOP study. Therefore, the selection of an experienced facilitator is an essential element for assuring the success of the HAZOP. Without an adequate depth of knowledge and experience, the HAZOP can become a "check the box" exercise.

Benefits of a HAZOP

The advantages offered by HAZOP over other process-risk analysis tools are numerous, and include the following:

- It is a rigorous process; it is structured, systematic and comprehensive
- It is adaptable to the majority of CPI and manufacturing operations, in-

cluding those in petroleum refineries (Figure 2) and other oil-and-gas processing plants, nuclear facilities, and specialty chemical, pharmaceutical and even high-speed manufacturing plants

- It is team-based and allows the interchange of knowledge and experience between the participants
- It helps to anticipate potential accidents or harm to employees, the facility, the environment and the surrounding community
- It functions as a type of training for the team's participants and leader, who are required by the nature of the method to look at the process from a new perspective — not just from the perspective of “how should it run?,” but also “how can it fail to run correctly?”

A HAZOP is time-consuming because it requires the participation of a multi-disciplinary team over extended timeframes. This investment of time and personnel, often involving third parties, means that the performance of the HAZOP needs to be optimized to maximize its value. The following sections detail some commonly found mistakes that occur during the planning, execution and followup stages of a HAZOP.

Planning stage

Mistake 1: Mismanagement of time-allotment issues. One of the most frequent mistakes of a HAZOP is failure to manage the time allotted for the study. A HAZOP is often scheduled for a set amount of time, neither by the HAZOP facilitator nor the team, and sufficient time may not have been allocated. Furthermore, there may be little or no flexibility in the schedule. An insufficient amount of time for the HAZOP limits discussion and brainstorming and reduces the quality of the analysis, in turn leading to some of the mistakes discussed in more detail below.

Estimating the duration of a HAZOP is not an exact science, and it requires a good knowledge of the methodology, the complexity of the process, the nature of the risks that can be identified up front and the idiosyncrasies of the group. Although a HAZOP should not be open-ended in time allotment, the ideal HAZOP has some flexibility built into the schedule. The team leader should make an



FIGURE 2. Many processes in the CPI are potentially hazardous if not managed correctly. HAZOP studies seek to prioritize actions to reduce process risks, and are adaptable across a wide range of industrial sectors

estimate of the time required for the team based on the process description and preliminary count of HAZOP nodes (specific portions or topics of the study process) so that managers are aware of the degree of personnel commitment that will be required.

Mistake 2: Incomplete, inaccurate or unavailable process safety information. Another common mistake during a HAZOP is not having all the prerequisite process safety information (PSI) and other valuable information available, including out-of-date or incomplete information. This is especially critical regarding piping and instrumentation diagrams (P&IDs), current standard operating procedures (SOPs) and appropriate data on flammability, combustibility, reactivity, toxicity and electrostatic properties of materials in all forms and phases, as well as compatibility of chemicals with each other and with the processing equipment. If the HAZOP is conducted by an external facilitator, it is the responsibility of the owner of the process to verify the integrity of the PSI.

Related to this, it is not acceptable that participants attend the HAZOP for the purpose of obtaining information on a process or project. HAZOP participants should be well prepared to contribute to the discussion and have all requisite background information with them. It is the responsibility of the facilitator to instruct all participants that they must come to the HAZOP prepared.

Mistake 3: Incorrect size of HAZOP team. The HAZOP team should be limited in size, ideally five to seven people, excluding the HAZOP facilitator and the HAZOP scribe or secretary. A team that is too large can easily lose focus, dwell on a subject or issue too long, or be disruptive. It is human nature that all participants seek to present their perspectives, but this can lead to excessive discussion. A group that is too small will not likely include the right expertise or provide enough different perspectives to evaluate the process hazards and controls adequately or in the right detail.

Execution stage

Mistake 4: Lack of focus during the meeting. A HAZOP is a complex exercise that requires the concentrated and coordinated contribution of all the members of the team. Distractions should be minimized in order to ensure and maintain the team's focus. Therefore, team members should not be allowed to come and go into and out of the meeting, take phone calls, answer emails, or discuss issues not related to the HAZOP during the sessions. Use of an offsite venue may be helpful to prevent plant operations from becoming a distraction.

It is the responsibility of the HAZOP facilitator to maintain the focus of the group and keep the HAZOP process moving by allowing some open discussion on the issue, node and con-



FIGURE 3. It is crucial that a HAZOP be explicitly targeted for the specific process in question, and not based on previous HAZOPs for similar processes, as process safety information and controls may have recently changed

sequence at hand, but not letting it get out of control. Sufficient (but not excessive) breaks for participants to eat and drink and conduct activities not related to the HAZOP, such as checking their emails and voice-mails, should be planned and coordinated. The HAZOP room should be free from cellphones, and distractions like texting during the HAZOP exercise should be forbidden.

Mistake 5: Preventing the team from brainstorming. Another frequent mistake in HAZOPs is to restrict the brainstorming exercise, which is, after all, the basis (and the power) of the method. The most common issues in this area include the following:

- Omitting key words, parameters or even nodes, with the argument that an upper bound for the consequences in this node can be easily identified, and these maximum consequences are protected by safeguards. This clearly means that steps or phases of the HAZOP procedure will be skipped, and some process hazards may not be identified. This violates the HAZOP methodology and overall purpose of conducting the HAZOP in the first place. Although on many occasions, strict application of the methodology will not identify any hazardous scenarios other than the obvious ones, which have already been listed up front and used as an argument for omitting any further analysis. Nevertheless, sometimes a non-obvious scenario will

be identified that constitutes the purpose of the HAZOP, and this is where it demonstrates its power

- Carrying out a superficial review of the combinations of key words and parameters, listing the most obvious, and often repetitive, causes of deviation without going into detail. In other words, repeating the same causes, parameter after parameter and node after node, instead of conducting a more in-depth analysis and discussion
- Carrying out HAZOPs using some form of prior information — pre-built templates or the HAZOP from a similar project, for example. Again, what the HAZOP is meant to do is analyze the possible specific risk scenarios (especially the non-obvious ones) of the process or project being studied at the time of the HAZOP (Figure 3). While one can refer to, or reference previous material, the HAZOP is to be conducted based upon the current facility or process, and the equipment, process or controls may have changed since the last HAZOP

In practice, the quality of a HAZOP is influenced by the ability of the HAZOP leader to ask the appropriate questions to ensure that the team identifies all the hazards of the process being studied, not only the most obvious hazards. This ability is based on the leader's experience with the HAZOP technique and his or her technical skills in process-hazard identification, as well as human error and equipment failure potential. It is

the responsibility of the HAZOP facilitator to manage the team and the HAZOP study process to ensure that the team stays focused and that no nodes or hazards are missed by the team.

Mistake 6: Mistaking the tools for the process. The HAZOP spreadsheet should not be viewed as a questionnaire whose boxes all have to be filled in, even with numerous repetitions of scenarios. The combination of pairs of key words and parameters is not intended to be an end in itself, but to encourage discussion and identify deviations from the desired state. As would be expected, the same deviation generally causes the alteration of more than one process parameter, and therefore could be entered in more than one place in the spreadsheet. An obvious example is a distillation column, in which pressure, temperature, composition and flowrate (of reflux, for example) are clearly interrelated. Hence, any change in one of the parameters automatically causes responses and changes in the others.

It is not as important for all the spreadsheet "boxes" to be filled in as it is for the HAZOP group to work effectively in identifying all the possible deviations. A HAZOP table is not and should not be a form-filling exercise. Rather, it should guide and structure strategic brainstorming discussion with the intent of identifying all hazards and operability problems that may injure employees (Figure 4), cause damage to property and assets, impact the community or cause environmental damage.

Mistake 7: Misrepresenting or misunderstanding safeguards. Documentation of effective and appropriate safeguards is a key step in the PHA team's decision whether additional process-risk reduction is required for a specific scenario. Examples of safeguards that are neither effective nor appropriate are given below:

- Local instruments that are never checked by field operators
- Alarms that fail to give the operator sufficient time to effectively halt the consequences of the deviation. Examples include the following:
 - Alarms that fail
 - Very generic alarms that are activated in numerous differ-

ent situations. In this case, the operator has to diagnose which of the multiple options he or she is faced with, thereby losing valuable time for action

- Alarms that are activated frequently, often for trivial reasons, and that therefore tend to be ignored by the operators
- Alarms where no specific operator response has been given in procedures and training
- Cascades of alarms, where “first-in” is not obvious or indicated

- Pressure-relief systems (such as safety valves and rupture discs) that were not designed for the case and process conditions being studied. Obviously, the purpose of a HAZOP is not to verify the correct design of pressure-relief systems. Nevertheless, if there is reasonable doubt, a recommendation should be issued to check that the scenario for which it was listed as a safeguard was one of the cases of design for the relief device or system

Operating procedures cannot be considered safeguards when the cause giving rise to the scenario is human error, which presupposes that the procedure has not been followed properly

Mistake 8: Excessive recommendations. Some HAZOP groups believe that they should issue a recommendation for any scenario that has negative consequences, whether a hazard scenario, equipment failure or operability problem. This is not in the spirit of the HAZOP method. What a HAZOP aims to do is identify all of the hazardous scenarios, determine the associated risk for each particular scenario and check whether the process has been duly protected by the safeguards, and only if there is not adequate protection, propose recommendations for doing so.

Mistake 9: Irrelevant recommendations. Sometimes, people will suggest and utilize HAZOP recommendations as a way to obtain approval for an operational or plant design improvement that is not necessarily directly related to the safety of personnel or the release of a hazardous chemical. In many cases, these changes have already been

evaluated and ruled out for various reasons. While a HAZOP can and should include recommendations related to operational and maintenance issues, the HAZOP's sole intent is for the identification of issues, not to find a solution to the problems or redesign the facility. All recommendations are made for further investigation and design considerations. Therefore, the actual HAZOP is not the best time or place to deal with these types of issues. They should be further investigated offline in the correct setting, and should include the appropriate personnel in the discussions.

Mistake 10: Excessively lax recommendations. When making recommendations in a HAZOP, it is very important to utilize the proper wording. Since the HAZOP team is composed of knowledgeable people, recommendations should be made that involve action. Two words that are highly over-utilized are “recommend” and “consider.” “Recommend” is already used in the title for the column and most of the time, the team's brainstorming makes up the “consideration” aspect of the recommendation being proposed. If additional risk analysis is required, “consider” is an appropriate phrase.

There are often multiple ways to reduce risk and the team's time should not be spent analyzing alternatives. Another common phrase seen in many HAZOP recommendations is “Further study on what needs to be done in order to...” — which in reality is not specific and can be left open for interpretation. Most of the time, recommendations that involve an action and have a specific purpose should be made. Start recommendations with strong action words, such as “install,” “investigate,” “graph,” or “add.” Additionally, when wording recommendations, if a recommendation is being made for a specific reason, include that reason in the recommendation so it is not forgotten when the HAZOP report is written or is being reviewed. The following are good examples of well-worded recommendations:

- Install a pressure gage and transmitter on the overhead line “L12” of the distillation column to increase the SIL level from 1 to 2
- Graph the P/T curve for the reaction process and add the accept-



FIGURE 4. HAZOP studies intend to provide a comprehensive index of the hazards and operability problems that may cause damage or put employees in danger

able operating range. Utilize this chart to set appropriate process alarm and shutdown points

It should be noted how these two recommendations are very specific action items and also include the reason for the action.

On some occasions, there may be two or more divergent opinions, and a consensus cannot be reached during the HAZOP itself. In this case, both recommendations should be included in the HAZOP and left for further investigation or evaluation by the company, based upon the information from the HAZOP. For scenarios such as these, the best solution — after further investigation and research is completed — may be something not even mentioned or thought about in the HAZOP itself.

Again, it should be reiterated that except for a few unique situations, such as the divergent opinion case, recommendations should be clear, specific, not open to interpretations and include the reasoning at the time that the HAZOP was conducted.

Mistake 11: Trying to solve the recommendation or design the solution during the HAZOP. Another common mistake that can delay the HAZOP and cause the group to lose its focus is trying to solve the problem or redesign the process listed in the recommendation during the HAZOP study itself. This is most common when process-design engineers are team members and they desire to make the process perfect. Unless it is a clear and easy solution, many recommendations require further investigation or other actions to complete the task, alleviate or minimize the hazard, and close out the action item based upon the recommendation. It must be remembered that a HAZOP is a brainstorming

exercise with knowledgeable process personnel from different areas of the plant, whose task is to identify hazards or hazardous scenarios and make practical recommendations to alleviate or minimize the hazardous scenarios or consequences. As previously stated, not all recommendations have clear-cut solutions, and the HAZOP time should not be wasted with actions that may require research and further investigation that only one of the participants, or a qualified expert, can resolve in the quiet of his or her own office. Even HAZOP-recommended changes to a process should be subjected to the site's management-of-change (MOC) process to prevent the introduction of new hazards. It is not uncommon for an incident to be triggered by a change made for safety reasons. The HAZOP can and should result in a list of actions or recommendations, with the designation of someone responsible for carrying them out, but not necessarily the final solution or re-engineering of the plant.

Followup stage

The output of the HAZOP study is the set of recommendations that are usually presented to management in a standardized report format. At this stage, site management is responsible for responding to each recommendation according to local or site requirements and the requirements of applicable standards, such as the U.S. Occupational Safety and Health Administration (OSHA) Process Safety Management (PSM) standard Title 29, CFR Part 1910.119. Site procedures should include regular followup reports to track recommendations to their resolution.

Mistake 12: Failure of management to act promptly on each recommendation. Site management must evaluate each recommendation according to its technical feasibility, the risk-reduction benefit versus total cost of implementation, availability of alternative solutions and other factors. The PSM standard allows rejection of a PHA recommendation only for specific causes. Good industry practices dictate that management takes prompt action on each recommendation and ensures that all recommendations are tracked to final resolution and closure.

Mistake 13: Failure to update HAZOPs when process knowledge changes. A HAZOP worksheet is a living document. Ideally, it reflects management's current knowledge of the process hazards, the consequences of those hazards and the controls necessary to reduce the process risk to a tolerable level. HAZOPs lose their effectiveness over time when they are not updated promptly.

Changes in process safety information should result in a PHA review through the site MOC procedure. The review will identify any new causes of a process deviation or operability issues, changes in safeguards for previously documented hazard scenarios, and possibly new or revised recommendations to address the hazards.

Recent accidents or near misses on a site process, or a similar process elsewhere, should trigger a HAZOP review to ensure that the same or similar scenario has already been considered and documented during the most recent HAZOP and that effective controls are in place to prevent a similar incident from occurring in the future.

Additional applications

For the sake of simplicity, this article has focused on common mistakes observed during the use of the HAZOP methodology. The discussion in this article can be equally applied to other scenario-based methodologies, such as "what-if" analyses, which can be carried out at very early stages of the process lifecycle — HAZOP is typically reserved for late-design stage or later-lifecycle stages when more detailed PSI is available. The specific PSI that is available and the expertise needed for other hazard evaluation methodologies may be different, but the types of mistakes discussed here, and their prevention, are very similar.

Closing thoughts

OSHA recognizes the HAZOP technique as an acceptable methodology for conducting PHAs of processes covered by the PSM standard. Other regulators around the world also accept the HAZOP methodology as appropriate for analyzing the existing and potential hazards of a complex process that involves a highly hazardous substance.

The HAZOP methodology repre-

sents an extremely powerful tool for the identification, semi-quantification and mitigation of risks in CPI production facilities with continuous, batch or semi-batch processes.

The biggest inconvenience of this technique is its relatively high cost, in terms of time and people who need to be involved and participate in the brainstorming sessions. This high cost means that the HAZOP needs to be carried out to optimum effect, avoiding the sorts of mistakes that have been discussed in this article. It is the responsibility of the HAZOP facilitator to make sure the group stays focused and does not commit any of these mistakes. Finally, the selection of a knowledgeable and experienced PHA facilitator is a crucial element for assuring the success of the HAZOP process. ■

Edited by Mary Page Bailey

Authors



Arturo Trujillo is managing director of Chilworth Amalthea, the Spanish subsidiary of the process safety division of DEKRA (Nàpols 249, 4ª planta 08013 Barcelona, Spain; Phone: +34-931-426-029; Email: arturo.trujillo@dekra.com). He has facilitated more than 200 HAZOPs, and his specialties include SIL and LOPA. Prior to working at Chilworth, he served as a division manager at Technip Iberia and as engineering director at Asesoría Energética. He attended Universitat Politècnica de Catalunya and received a Ph.D. from Johns Hopkins University.



Walter S. Kessler is a senior process safety consultant at Chilworth Technology Inc. (113 Campus Drive, Princeton, NJ 08540; Phone: 832-492-4358; Email: walter.kessler@dekra.com). Kessler has 20 years of experience in the petroleum refinery, gas-processing, specialty-chemical, pharmaceutical, manufacturing and HVACR (heating, venting, air conditioning and refrigeration) industries, including five years performing process-safety engineering functions. He was instrumental in the design and construction of several refinery, gas and chemical processing facilities, designing a pharmaceutical filling process and also has experience in Six Sigma and lean manufacturing.



Robert L. Gaither is a senior process safety specialist at Chilworth Technology Inc. (113 Campus Drive, Princeton, NJ 08540; Phone: 732-589-6940; Email: robert.gaither@dekra.com). Gaither has more than 28 years of experience in company operations, regulatory compliance, management consulting and process safety and risk management. He has led organizations at site, division and corporate levels to achieve record safety performance and significant cost savings. Gaither is trained in HAZOP and SIL/LOPA facilitation. He holds a Ph.D. and is a certified safety professional (CSP).

December
2015

www.chemengonline.com

CHEMICAL ENGINEERING

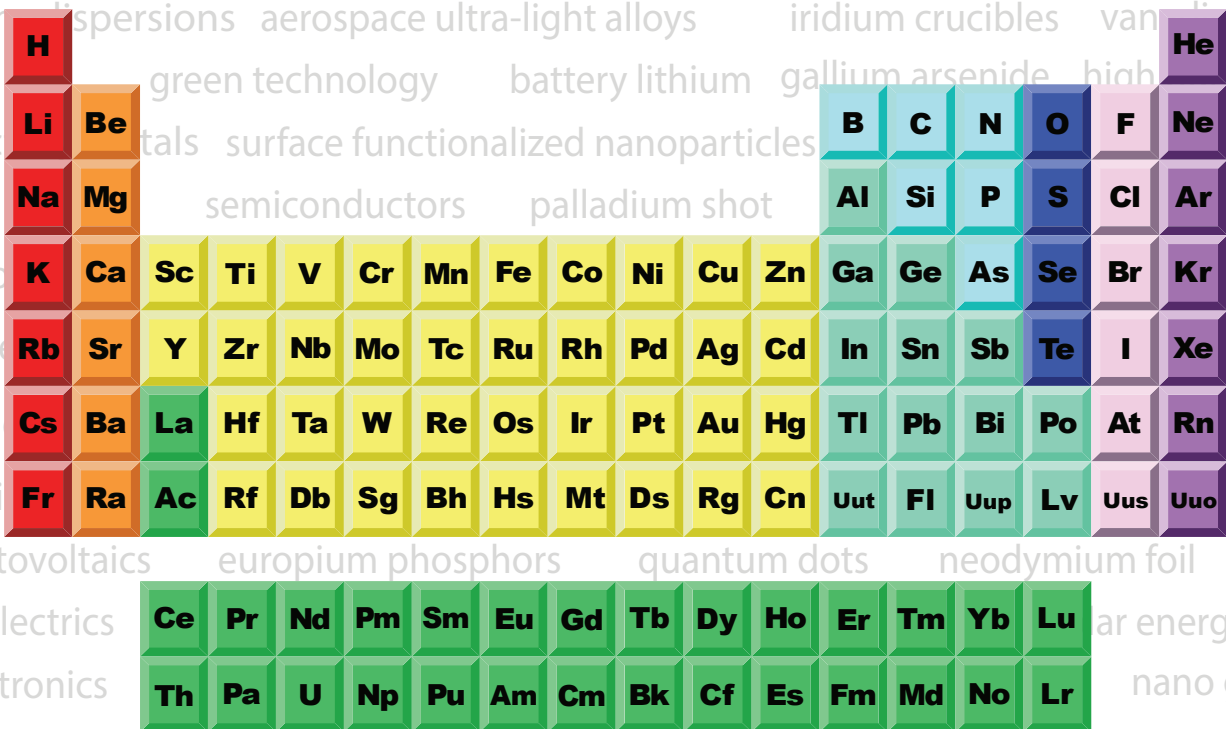
Buyers' Guide 2016

Featured Product & Service Providers



INSIDE:

Product & Services Index	63
Corporate Profiles	77
Company Directory	85
Liquid, Gas and Air Handling	99
Solids Handling	114
Electrical Power Generation & Transmission	119
Instrumentation & Controls	122
Processing Equipment	133
Engineering Materials	166
Plant Maintenance	171
Design, Engineering & Construction	174
Information Technology	178
Environmental Services	181
Process Chemicals	185



Now Invent.™



THE MATERIALS SCIENCE MANUFACTURER®

catalog: americanelements.com

©2001-2016. American Elements is a U.S. Registered Trademark.

Circle 20 on p. 190 or go to adlinks.chemengonline.com/56204-20



Made in India.

Made for the World.

Someone said "the bitterness of poor quality is remembered long after the sweetness of low price is forgotten." If you are often caught in a Catch-22 situation of price versus performance, then worry no more. Dipesh Engineering Works provides coded equipment, plants and skids of the right quality and at the right price. As a leading Indian supplier, we have been successfully supplying process equipment to global markets.

With a proven past track record of supplying a single piece of equipment to a complex system successfully for almost all industry sectors, we are fast building a reputation of versatile and trustworthy process equipment supplier.

We have handled various materials including, Stainless Steel, Duplex/Super Duplex Steels, Alloy Steels, Carbon Steel, Nickel/Moly/Chrome Alloys, Copper-Nickel Alloys, Nickel, Copper, Titanium Etc. in Bare & Explosion Bonded Constructions with good Exposure to Polymeric Coatings and Linings.

Our four factories and two shops certified by ASME U, U2, R & NB, and prior CE (PED) experience can help ensure that you get optimal performance out of your process equipment for years to come. Our 500+ designers, fabricators, technical staff and strong QA/QC work hand in hand to deliver equipment, skids and plants on time, everytime.

Dipesh Engineering Works: A viable and world-class process equipment manufacturing alternative.

Talk to us to know what we can do for you.



Dipesh Engineering Works

■ A member of J. B. Patel Group of Companies ■

3rd Floor, Sej Plaza, Junction of S V Road & Marve Road, Near Nutan High School, Malad West, Mumbai – 400 064. INDIA

Tel: +91.22.4073 6749 / 52 | Fax: +91.22. 4073 6737

Email: exports@dipeshengg.net | Website: www.dipeshengg.com

Uniflux[®]

High quality engineered heaters since 1957

- Unique forced draft convective heat transfer process heaters.
- The Uniflux high velocity burner's short flame extension prevents flame impingement on the tubes and eliminates tube coking and fluid degradation.
- Uniflux heaters utilize the complete circulation of exhaust gases around the process tubes resulting in uniform flux density around the tube periphery and long tube life.
- Automatic operating and safety controls meet NFPA, API or IEC requirements and are factory assembled and tested.

Applications

- Heat Transfer Fluid
- Regeneration Gas
- Water
- Glycol-water
- Air
- Steam Superheaters
- Cryogenic
- Crude Oil
- Emulsions
- Offshore Production
- Gas Processing
- Natural Gas Liquids
- Vaporizers

Specifications

- 1 million to 70 million Btu/Hr
- 20:1 Turndown Ratios
- High Efficiency Economizers
- Temperatures to 1,500 F
- Carbon Steel, Stainless Steel & High Alloy Heat Transfer Coils
- Natural gas or light oil fuels



UNIFLUX/Exotherm Corporation • 888 Wilcrest Dr. • Houston, TX 77042

Phone: (713) 981-9100 • Fax: (713) 981-7081 • Email: info@exotherm.com • www.Exotherm.com

Circle 33 on p. 190 or go to adlinks.chemengonline.com/56204-33

PRODUCT & SERVICE INDEX

HOW TO USE THIS GUIDE

Using CEBG is simple and straightforward:

1. Look up the product or service under the main noun that describes it in the Product & Service Index; for example, Pumps, rotary, or Analyzers, infrared. Ample cross-referencing is provided for products with several names. Boldface items are general product categories.
2. Turn to the indicated page in the Product & Service Directory, where you will find the names of manufacturers of that product. Companies in boldface and capital letters are display advertisers; page numbers direct you to their product inserts or advertisements.
3. Refer to the Company Directory to find the manufacturers nearest you—your local sources. Call the sources for data, delivery and price. Please be sure to tell them how quickly you found them in CEBG.

A

Absorbers, vibration.....	172	Adsorbents, nonpolar.....	186	Air preheat systems.....	148
Acid gas removal systems.....	158	Adsorbents, spill control.....	186	Air purifiers.....	173
Acid mist/Gas cleaning.....	171	Adsorbents, zeolites.....	186	Air separation equipment.....	100
Acids, inorganic.....	185	Adsorption systems, carbon.....	182	Air separation equipment, cryogenic...100	
Acids, organic.....	185	Adsorption systems, other.....	182	Air separation equipment, membrane..100	
Acrylic copolymers.....	169	Advanced process control.....	179	Air separation equipment, pressure	
Acrylics.....	169	Aerators.....	158	swing adsorption.....	100
Activated carbon.....	185	Aerators, water pollution.....	184	Air separation equipment, vacuum	
Active pharmaceutical ingredients.....	185	Afterburners.....	182	swing adsorption.....	100
Actuators.....	123	Aftercoolers.....	145	Alarm Management.....	179
Actuators or starters, motor.....	121	Agglomerators.....	115	Alarms, annunciator.....	127
Actuators, operators.....	123	Air conditioners.....	134	Alarms, carbon monoxide.....	127
Adhesives.....	169	Air conditioning & refrigeration		Alarms, combustible gases.....	127
Adsorbents, Activated Alumina.....	185	equipment.....	134	Alarms, combustion.....	127
Adsorbents, for carbon dioxide.....	185	Air pollution abatement systems.....	182	Alarms, flame.....	127
Adsorbents, for hydrocarbons.....	185	Air pollution control.....	182	Alarms, flow.....	127
Adsorbents, for oil.....	186	Air pollution control equipment &		Alarms, humidity.....	127
Adsorbents, for PCBs.....	185	systems.....	182	Alarms, liquid level.....	127

PRODUCT & SERVICE INDEX

Alarms, motion	127
Alarms, other	127
Alarms, portable (gas, vapor)	127
Alarms, pressure	127
Alarms, solids level.....	127
Alarms, temperature.....	128
Alcohols, other.....	186
Alcohols, oxo.....	186
Alkalies	186
Alloy identification equipment	130
Alloys, brazing.....	172
Aluminum.....	166
Aluminum & aluminum alloys	166
Aluminum alloys	166
Anaerobic treatment systems.....	183
Analog process control computers	125
Analyzers, air quality	123
Analyzers, atomic absorption.....	123
Analyzers, biological	123
Analyzers, BOD.....	123
Analyzers, carbon dioxide or monoxide	123
Analyzers, chlorine.....	123
Analyzers, chlorine, total	123
Analyzers, chromatographic	123
Analyzers, combustible gases	123
Analyzers, combustion.....	123
Analyzers, concentration.....	123
Analyzers, conductivity	123
Analyzers, corrosion rate.....	123
Analyzers, emission.....	123
Analyzers, environmental conditions..	123
Analyzers, fats & oils	123
Analyzers, gas density	123
Analyzers, hydrocarbons	123
Analyzers, hydrogen	123
Analyzers, infrared	123
Analyzers, mass spectrometer.....	123
Analyzers, moisture content	123
Analyzers, near infrared	123
Analyzers, neutron activation	124
Analyzers, nitrogen.....	124
Analyzers, nitrogen oxide.....	124
Analyzers, nitrogen, total.....	124
Analyzers, offstream.....	123
Analyzers, oil content	124
Analyzers, onstream.....	125
Analyzers, organic carbon	124
Analyzers, organic carbon, total	124
Analyzers, oxygen content.....	124
Analyzers, oxygen demand.....	124
Analyzers, oxygen, dissolved.....	124
Analyzers, ozone content.....	124
Analyzers, particle size	124
Analyzers, pH.....	124
Analyzers, phosphorus.....	124
Analyzers, photometric.....	124
Analyzers, sodium ion concentration ..	124
Analyzers, sound.....	124
Analyzers, spectrometer	124
Analyzers, spectrophotometer	124
Analyzers, stack gases	124
Analyzers, sulfur dioxide	124
Analyzers, sulfur, total	124
Analyzers, suspended solids	124
Analyzers, thermal.....	124

Analyzers, thin film	124
Analyzers, titration	124
Analyzers, total solids.....	124
Analyzers, ultraviolet	124
Analyzers, vapor pressure	124
Analyzers, vibration	172
Analyzers, VOCs	123
Analyzers, water quality	124
Antioxidants.....	186
Antiskid materials	173
Aprons	173
Arbitration, engineering.....	175
Argon.....	186
Arresters, flame deflagration or detonation	173
Arresters, flame, tank vent, inline	173
Arresters, surge.....	173
Ash conditioning systems	120
Aspiration systems	106
Asset management	179
Atomizers.....	158
Autoclaves.....	155

B

Bag closing machines.....	117
Bag filling machines	117
Bag filling machines, vacuum	117
Bag, empty, handling systems	117
Baghouses	139
Bags	117
Balers	117
Bands, electric heating	121
Bar coding.....	179
Barrel handling equipment.....	117
Barrels & drums.....	117
Batch control	179
Batching & blending systems	153
Batching & blending systems	118
Baths, constant temperature	148
Batteries & electrical storage equipment	121
Bearing isolators.....	120
Bearings	120
Bearings & bushings.....	120
Bellows, metallic.....	102
Bends, pipe.....	101
Beryllium & alloys	168
Bin activators.....	114
Bin inserts.....	114
Bins.....	114
Bins & other dry storage equipment ..	114
Bins, weighing.....	114
Bio-oxidation units.....	184
Biochemical equipment.....	155
Biocides, halogenated	186
Biocides, inorganic.....	186
Biocides, other	186
Biocides, phenolics	186
Biofilters.....	142
Biological treatment.....	184
Bioreactors	155
Bioremediation services	183
Blenders, cone	153
Blenders, continuous.....	153

Blenders, horizontal.....	153
Blenders, inline.....	153
Blenders, liquid feed	153
Blenders, pneumatic	153
Blenders, ribbon.....	153
Blenders, spiral	153
Blenders, tumbling V	153
Blinds, pipeline.....	101
Blowers, axial flow	100
Blowers, centrifugal, compressor-type..	100
Blowers, centrifugal, fan-type.....	100
Blowers, positive displacement.....	101
Blowers, regenerative.....	101
Blowers, rotary piston.....	101
Blowout doors & panels	173
Boiler accessories	120
Boiler feedwater systems	164
Boilers, automatic, packaged	120
Boilers, carbon monoxide fired	120
Boilers, coal fired.....	120
Boilers, fire tube	120
Boilers, fluidized bed.....	120
Boilers, industrial	120
Boilers, integral furnace	120
Boilers, natural gas fired	120
Boilers, oil fired.....	120
Boilers, waste heat recovery	120
Boilers, water tube.....	120
Boosters, rotary piston	101
Borescopes	172
Brass	167
Breakers	161
Briquetting systems.....	115
Bronze	167
Bulk carriers, loading & unloading equipment	115
Bulk chemical carriers.....	115
Bulk liquid storage services	107
Burners, coal	149
Burners, combination fuel	149
Burners, gas.....	149
Burners, oil	149
Bushings.....	120
Bushings, pump	102

C

Cables, fiberoptic	132
Cables, other	132
Calciners, fluidizing.....	149
Calciners, rotary	149
Calenders	115
Calibration & test equipment.....	130
Calibration gas standards	130
Calibration management	179
Calorimeters	130
Cameras, high-speed.....	130
Carbides.....	166
Carbon & graphite.....	166
Carbon dioxide recovery plants	182
Carbon steels	170
Carbon-carbon composites	167
Carbonylation reactors	155
Cargo Protection	169
Cartons.....	117

PRODUCT & SERVICE INDEX

Cast irons	167	Chromatography, production-scale equipment	158	Combustors, catalytic	182
Cast irons, alloy	167	Chromium & alloys	168	Combustors, other	182
Cast irons, high-silicon	168	Chutes	116	Comminutors	161
Castables	170	CIP Spray Nozzles	158	Compactors	115
Castings, foundries	135	Circuit breakers	121	Compliance-information management	183
Catalyst supports & systems	186	Claddings & coatings, custom	135	Composites	167
Catalysts, acid	186	Clarifiers, flotation	134	Compressor lubrication	100
Catalysts, cracking	186	Clarifiers, settling	134	Compressors	100
Catalysts, custom	186	Classifiers & gravity separators	134	Compressors, centrifugal	100
Catalysts, dehydrogenation, spent	186	Classifiers, air	134	Compressors, diaphragm	100
Catalysts, desulfurization	186	Classifiers, cyclone	134	Compressors, high pressure	100
Catalysts, hydrogenation	186	Classifiers, mechanical, magnetic	134	Compressors, oil-free	100
Catalysts, hydrotreating	186	Classifiers, mechanical, screening	134	Compressors, portable	100
Catalysts, organic synthesis	186	Classifiers, mechanical, vibrating	134	Compressors, reciprocating	100
Catalysts, other	186	Cleaners & refacers, tube	171	Compressors, rotary	100
Catalysts, oxidation	186	Cleaning chemicals & services	171	Compressors, rotary liquid ring	100
Catalysts, palladium	186	Cleaning equipment & services	171	Compressors, rotary screw	100
Catalysts, platinum	186	Cleaning equipment, blast	171	Compressors, rotary sliding vane	100
Catalysts, polymerization	186	Cleaning equipment, chemical	171	Compressors, single stage, expander driven	100
Catalysts, polyolefin production	186	Cleaning equipment, high-pressure liquid	171	Compressors, turbodynamic	100
Catalysts, precious metal	186	Cleaning equipment, mechanical	171	Computational fluid dynamics	179
Catalysts, Raney nickel	186	Cleaning equipment, pharmaceutical	171	Computer aided design & drafting systems	180
Catalysts, reforming	186	Cleaning equipment, steam	171	Computer hardware	178
Catalysts, rhenium	186	Cleaning equipment, tank cleaning	171	Computer software	179
Catalysts, rhodium	186	Cleaning parts & accessories	171	Computer Software	179
Catalysts, ruthenium	186	Climbing safety equipment	173	Computers for design & engineering	180
Catalysts, urethane production	186	Clothing, chemical resistant	173	Computers, mainframe	178
Catalysts, vinyl production	186	Coalescers	155	Computers, monitors & displays	178
Catalysts, zeolite	186	Coaters & coating machinery	115	Computers, personal	178
Cellulose acetate butyrate	169	Coating, forming & agglomeration equipment	115	Computers, printers & plotters	178
Centrifuge parts & accessories	134	Coatings, acrylic	169	Computers, process control	125
Centrifuges	134	Coatings, ceramic	169	Condensate return systems	145
Centrifuges, batch, automatic basket	134	Coatings, diffusion	169	Condensers, air cooled	145
Centrifuges, batch, perforated basket	134	Coatings, epoxy	169	Condensers, barometric	145
Centrifuges, continuous, conical angle, perforated basket	134	Coatings, fluoropolymer	169	Condensers, coil	145
Centrifuges, continuous, pusher discharge	134	Coatings, metallic	169	Condensers, evaporative refrigerant	145
Centrifuges, continuous, solid bowl, scroll discharge	134	Coatings, nonskid	169	Condensers, fractional	145
Centrifuges, disc, nozzle discharge	134	Coatings, nonstick	169	Condensers, jet ejector	145
Centrifuges, disc, solid bowl	134	Coatings, nonslip	169	Condensers, plate	145
Centrifuges, disc, valve discharge	134	Coatings, plastic	169	Condensers, reflux	145
Centrifuges, filter, continuous, screen bowl, scroll discharge	134	Coatings, powder	169	Condensers, refrigerant	145
Centrifuges, filter, inverting	134	Coatings, PVC	169	Condensers, shell & tube	145
Centrifuges, laboratory or pilot plant	134	Coatings, refractory	169	Condensers, steam	145
Centrifuges, liquid-liquid	134	Coatings, silicate	169	Condensers, surface	145
Centrifuges, other	134	Coatings, urethane	169	Condensers, tubular	145
Centrifuges, solid basket	134	Coatings, vinyl ester	169	Condensers, vapor	145
Ceramic metals	167	Cobalt alloys	168	Construction	175
Ceramics, including glass	166	Cogeneration systems & equipment	121	Construction Management	175
Chambers, test	130	Coils	148	Consultants, corrosion protection	175
Chelating agents	186	Coils, tubing	108	Consultants, double containment systems design & installation	175
Chemical equipment design	179	Colorimeters	130	Consultants, engineering	175
Chemical plant design & maintenance	179	Columns, absorption or adsorption	163	Consultants, high purity process design	175
Chemical process design	179	Columns, bubble cap	163	Consultants, materials	175
Chillers, recirculating	148	Columns, contacting or mixing	163	Consultants, safety & health	175
Chimneys, stacks & vents	182	Columns, custom fabricated	163	Consultants, water treatment	175
Chippers	161	Columns, fluidized bed	163	Consultants, Welding	175
Chlorinators	184	Columns, graphite	163	Containers, hazardous waste	183
Chromatographs, onstream	125	Columns, ion exchange	163	Containers, safety	173
		Columns, packed	163	Contract manufacturing systems	175
		Columns, thin film	163	Controllers	126
		Columns, vacuum	163	Controllers, air conditioning	126
		Columns, valve tray	163		
		Columns, wire mesh tray	163		

PRODUCT & SERVICE INDEX

Controllers, batching or weighing	126	Cooling towers, repair & upgrade	135	Detectors, gases	124
Controllers, bin level	126	Cooling-water treatment, chemical	164	Detectors, gases, combustible	124
Controllers, boiler	126	Copper	167	Detectors, gases, toxic	124
Controllers, combustion	126	Copper & copper alloys	167	Detectors, interface	130
Controllers, electric	126	Copper alloys, other	167	Detectors, leak	130
Controllers, flow & flow ratio	126	Corrosion measurement equipment	130	Detectors, liquid-leak	124
Controllers, humidity	126	Counters	127	Detectors, metal	124
Controllers, liquid level	126	Couplings, dry-disconnect	101	Detectors, metal	130
Controllers, oxidation-reduction potential	126	Couplings, flexible	101	Detectors, moisture	124
Controllers, pH	126	Couplings, pneumatic conveyors	116	Detectors, other	124
Controllers, pneumatic	126	Couplings, quick connect	101	Detectors, radiation	124
Controllers, pressure	126	Couplings, rigid	101	Detectors, sludge blanket level	124
Controllers, process	126	Couplings, self aligning	101	Detectors, vibration	124
Controllers, product	126	Couplings, shaft	120	Dewatering agents	186
Controllers, programmable	126	Coveralls	173	Dewatering, mechanical press	142
Controllers, pump	126	Crushers, cone	161	Diffusers, spargers	158
Controllers, SCR power	126	Crushers, fluid energy	161	Diffusers, water pollution control	184
Controllers, sludge level	126	Crushers, gyratory	161	Digesters, cookers	156
Controllers, temperature	126	Crushers, impact	161	Digesters, sewage sludge	184
Controllers, vacuum	127	Crushers, jaw	161	Digital computers, data processing	178
Controllers, viscosity	127	Crushers, prebreaker	161	Direct digital process control computers	126
Converters, signal	132	Crushers, rotary	161	Disintegration equipment parts & accessories	161
Conveyor accessories	116	Crushers, rotary blade	161	Dispersing agents, leather	187
Conveyor belting	116	Cryogenic equipment	134	Dispersing agents, other	187
Conveyors & elevators for bulk materials	116	Crystallizers, cooling	140	Dispersing agents, pigment	187
Conveyors, apron	116	Crystallizers, evaporative	140	Dispersing agents, rubber	187
Conveyors, belt	116	Crystallizers, freeze	140	Dispersing agents, textile	187
Conveyors, bucket	116	Crystallizers, melt	140	Displays, liquid-crystal	127
Conveyors, cooling	116	Crystallizers, Oslo Krystal	140	Disposal units, hazardous waste	183
Conveyors, drag	116	Crystallizers, scraped surface	140	Disposal units, liquid waste	183
Conveyors, flexible	116	Crystallizers, vacuum	140	Disposal units, sewage	183
Conveyors, flight	116	Custom fabricated equipment	135	Distillation columns, automatic packaged unit	163
Conveyors, fluidizing	116	Custom processing	175	Distillation columns, molecular distillation	163
Conveyors, gravity	116	Cylinders, pneumatic	123	Distillation columns, sieve tray	163
Conveyors, magnetic	116			Distillation columns, steam stripping	163
Conveyors, other	116			Divers	158
Conveyors, pneumatic	116	D		Drift eliminators, cooling tower	135
Conveyors, portable	116	Dampers	100	Drives, belt	120
Conveyors, roller	116	Data acquisition & process control	179	Drives, conveyor	120
Conveyors, screen	116	Data logging systems	127	Drives, crusher	120
Conveyors, screw	116	Data presentation equipment	127	Drives, gear	120
Conveyors, slat	116	Data Transmission, Wireless	132	Drives, magnetic	120
Conveyors, tray	116	Data visualization	179	Drives, Other	120
Conveyors, vacuum	116	Database services	175	Drives, pump	120
Conveyors, vertical	116	Deaerator Rentals	156	Drives, Turbine	120
Conveyors, vibrating	116	Deaerators, degasifiers	156	Drives, variable speed, centrifuge	120
Conveyors, weighing	116	Decanters	134	Drives, variable speed, electrical	120
Coolers, air cooled	145	Decking	168	Drives, variable speed, hydraulic	120
Coolers, belt	145	Defoamers	186	Drives, variable speed, mechanical	120
Coolers, brine	145	Defoamers, chemical	186	Drives, variable speed, mixer	120
Coolers, cascade	145	Defoamers, physical	140	Drum filling equipment	117
Coolers, closed circuit	145	Degreasers	186	Drum handling equipment	118
Coolers, coil	145	Dehumidifiers	134	Drums & drum liners, corrosion resistant	117
Coolers, drum	145	Deluge systems	172	Dryer parts & accessories	136
Coolers, evaporative	145	Demolition	175	Dryers	136
Coolers, finned tube	145	Densifiers	115	Dryers, air	136
Coolers, flash	145	Density-measuring equipment	130	Dryers, apron	136
Coolers, plate	146	Deodorizers	182	Dryers, batch	136
Coolers, rotary	146	Desalination units	164	Dryers, belt	136
Coolers, screw	146	Desiccants	186	Dryers, centrifugal	136
Coolers, spray	146	Design of experiments	179	Dryers, chamber	136
Coolers, water	146	Desuperheaters	146		
Cooling tower systems	135	Detectors, dust	124		
Cooling towers	135	Detectors, explosion	124		
		Detectors, flame	124		

PRODUCT & SERVICE INDEX

Dryers, closed circuit	136
Dryers, conical, vacuum	136
Dryers, continuous	136
Dryers, conveyor	136
Dryers, desiccant, disposable cartridge	137
Dryers, desiccant, package unit	137
Dryers, drum	137
Dryers, drum, rotary vacuum	137
Dryers, electric	137
Dryers, flash	137
Dryers, fluidized bed	137
Dryers, freeze	137
Dryers, gas	138
Dryers, infrared	138
Dryers, microwave	138
Dryers, oxygen-enriched air	138
Dryers, paddle	138
Dryers, pan	138
Dryers, radiant heat	138
Dryers, refrigerated air	138
Dryers, ring	138
Dryers, rotary	138
Dryers, screw flight	138
Dryers, shelf, vacuum	138
Dryers, spiral screw	138
Dryers, spray	138
Dryers, steam jacketed	138
Dryers, steam tube	138
Dryers, suspension	138
Dryers, tray	138
Dryers, tray, vacuum	139
Dryers, tumble	139
Dryers, tunnel	139
Dryers, V cone	136
Dryers, vacuum	139
Dryers, vacuum pan	139
Dryers, vertical	139
Dryers, vibrating	139
Ductile iron	168
Ducts & ventilation systems	100
Ducts, fiberglass-reinforced plastic	100
Ducts, flexible	100
Ducts, metallic	100
Ducts, plastic	100
Ducts, rigid	100
Dumpers	115
Dust & Ventilation Systems	100
Dust collector parts & accessories	139
Dust collectors & separators	139
Dust collectors, bag filtering	139
Dust collectors, cartridge	139
Dust collectors, centrifugal	139
Dust collectors, cyclone	139
Dust collectors, electrostatic precipitators	139
Dust collectors, oil type	140
Dust collectors, other	140
Dust collectors, pulse jet	140
Dust collectors, tray type	140
Dust collectors, tubular	140
Dust collectors, wet	140
Dust removal equipment	140

E

Economizers	146
Elbows, pipe	101
Electrical & power generation equipment	121
Electrical equipment, intrinsic safety	132
Electrical equipment, other	121
Electrical heating equipment	121
Electrochemical equipment	140
Electrodes, ion-sensitive	130
Electrodes, pH	130
Electrodes: anodes & cathodes	140
Electrodialysis units	164
Electrolytic cells	140
Elevators, belt	116
Elevators, bucket	116
Emergency shutdown systems	173
Emulsifiers	187
Enclosures, instrument	130
Engine-generator sets	121
Engineering services	175
Engineering, biochemical & biotech	175
Engineering, Welding	175
Engineering: blast resistant modules	175
Engineering: clean rooms	175
Engineering: construction & field erection	175
Engineering: cryogenic equipment	175
Engineering: equipment inspection & expediting	175
Engineering: facilities planning	175
Engineering: instrumentation & control systems	175
Engineering: modular process systems	175
Engineering: packaged pilot plants	176
Engineering: pilot plants	176
Engineering: plant design	176
Engineering: plant modernization	176
Engineering: pollution & environmental services	176
Engineering: process design	176
Engineering: process modeling	176
Engineering: procurement	177
Engineering: project management	177
Engineering: research	177
Engines, diesel	121
Engines, gasoline	121
Engines, LPG	121
Engines, natural gas	121
Enterprise resource planning	179
Entrainment separation equipment	140
Environmental consulting	183
Environmental laboratories	183
Environmental regulations, interpreting	183
Environmental services	182
Environmental-compliance reporting	179
Environmental, health & safety	179
Epoxies	169
Equipment repair & rebuilding	172
Equipment testing	177
Equipment, process, custom	135
Equipment, process, custom, cryogenic	135

Equipment, used: procurement & supply	177
Evaporative systems, mechanical recompression	140
Evaporative systems, multiple effect	141
Evaporative systems, thermal recompression	141
Evaporators & crystallizers	140
Evaporators, agitated film	141
Evaporators, climbing film	141
Evaporators, falling film	141
Evaporators, flash	141
Evaporators, forced circulation	141
Evaporators, low temperature	141
Evaporators, plate type	141
Evaporators, short path	141
Evaporators, thin film	141
Evaporators, vertical long tube	141
Evaporators, vertical short tube (calandria)	142
Evaporators, waste water	142
Evaporators, wiped film	142
Exhaust systems, clean-room	100
Expanders	121
Expanders, tube	172
Expansion bellows	101
Expansion joints, flexible	101
Expansion joints, swivel	101
Explosion isolation	173
Explosion suppression systems	173
Explosion Testing	173
Explosion vents	173
Extraction equipment	156
Extractors, centrifugal	158
Extruders	115
Extrusions, custom	135

F

Face shields	173
Failure analysis	179
Fans & blowers	100
Fans, air cooled	101
Fans, axial	101
Fans, centrifugal	101
Fans, cooling tower	101
Fans, corrosion resistant	101
Fans, exhaust	101
Fans, exhaust or ventilating, general use	101
Fans, explosion resistant	101
Fans, heavy duty	101
Fans, high temperature	101
Fans, other	101
Fans, portable	101
Fans, vane, axial	101
Felt, filter	142
Fermentation equipment & fermentors	156
Fiberglass-epoxy	169
Fiberglass-polyester	169
Fibers, mineral	166
Film, gas barrier	168
Filter aids, activated carbon	142
Filter aids, diatomaceous earth	142

PRODUCT & SERVICE INDEX

Filter aids, zeolite.....	142
Filter bags, natural fiber.....	142
Filter bags, synthetic fiber.....	142
Filter cloth, acidproof.....	142
Filter cloth, alkaliproof.....	142
Filter cloth, cotton.....	142
Filter cloth, glass.....	142
Filter cloth, metallic.....	142
Filter cloth, natural fiber.....	142
Filter cloth, synthetic fiber.....	142
Filter housings.....	142
Filter media & aids.....	142
Filter media, other.....	142
Filter parts & accessories.....	142
Filter presses.....	142
Filter systems.....	144
Filters, activated carbon.....	142
Filters, air.....	143
Filters, bag.....	143
Filters, belt.....	143
Filters, bio-oxidation.....	184
Filters, cartridge.....	143
Filters, centrifugal.....	143
Filters, clarifying.....	143
Filters, crossflow.....	143
Filters, disc, pressure.....	143
Filters, disc, vacuum.....	143
Filters, drum, rotary pressure continuous.....	143
Filters, drum, rotary vacuum continuous.....	143
Filters, gas.....	143
Filters, gravity, porous bed.....	143
Filters, HEPA.....	143
Filters, horizontal belt, vacuum.....	143
Filters, jacketed.....	143
Filters, leaf, horizontal, pressure.....	143
Filters, leaf, vacuum.....	143
Filters, leaf, vertical, pressure.....	143
Filters, magnetic.....	143
Filters, membrane.....	143
Filters, microfiltration.....	143
Filters, nanofiltration.....	143
Filters, nutsche.....	144
Filters, oil removal.....	144
Filters, other.....	144
Filters, pan.....	144
Filters, pipeline.....	144
Filters, plate & frame.....	144
Filters, polymer.....	144
Filters, porous metal.....	144
Filters, portable.....	144
Filters, precoat.....	144
Filters, pressure.....	144
Filters, refrigerated.....	144
Filters, sand.....	144
Filters, self-cleaning.....	144
Filters, tray.....	144
Filters, tubular.....	144
Filters, ultrafiltration.....	144
Filters, vibrating.....	144
Filters, water.....	144
Filtration equipment.....	142
Fire alarm systems.....	172
Fire detection systems.....	172
Fire extinguishers, portable.....	172

Fire extinguishing systems, carbon dioxide.....	172
Fire extinguishing systems, dry chemical.....	172
Fire extinguishing systems, foam.....	172
Fire extinguishing systems, halogenated hydrocarbon.....	172
Fire protection equipment.....	172
Fire pumps.....	172
Firebrick.....	170
Flakers.....	161
Flakers, drum.....	142
Flame retardants.....	187
Flanges.....	101
Flares, stack & accessories.....	182
Flash points, automatic.....	130
Flexible hose, metallic & nonmetallic.....	101
Flocculation equipment.....	184
Flooring, acid resistant.....	168
Flooring, aluminum.....	168
Flooring, asphalt.....	168
Flooring, brick.....	168
Flooring, carbon.....	168
Flooring, fiberglass.....	168
Flooring, iron & steel.....	168
Flooring, metal grid.....	168
Flooring, skid resistant.....	168
Flow conditioners.....	102
Flowmeters, coriolis.....	128
Flowmeters, differential pressure.....	128
Flowmeters, electromagnetic.....	128
Flowmeters, magnetic.....	128
Flowmeters, mass.....	128
Flowmeters, orifice plate.....	128
Flowmeters, positive displacement.....	128
Flowmeters, propeller.....	128
Flowmeters, rotameters.....	128
Flowmeters, turbine.....	128
Flowmeters, ultrasonic.....	128
Flowmeters, variable area.....	128
Flowmeters, vortex shedding.....	128
Flowmeters, weirs & flumes.....	128
Fluidic systems.....	130
Fluorocarbons.....	169
Foams, plastic.....	169
Foams, refractory.....	170
Formings, exotic metal, custom.....	135
Freight & Cargo Protection.....	170
Full-service environmental firms.....	183
Furnaces, annealing.....	149
Furnaces, cracking.....	149
Furnaces, electric.....	149
Furnaces, fluid bed.....	150
Furnaces, gas burning.....	150
Furnaces, hearth.....	150
Furnaces, high pressure.....	150
Furnaces, high temperature.....	150
Furnaces, induction.....	150
Furnaces, melting.....	150
Furnaces, muffle.....	150
Furnaces, multiple hearth.....	150
Furnaces, radiant heating.....	150
Furnaces, rotary hearth.....	150
Furnaces, vacuum.....	150
Furnaces, vertical.....	150
Fused silica.....	166

G

Gages, density.....	128
Gages, filter.....	128
Gages, liquid level.....	128
Gages, liquid level, sanitary.....	128
Gages, mechanical force.....	128
Gages, nuclear radiation.....	128
Gages, pressure.....	128
Gages, tank.....	128
Gages, temperature.....	128
Gages, vacuum & differential pressure.....	128
Gages, water.....	128
Gas dilution systems.....	130
Gas sampling bags.....	130
Gaskets, fluoroplastic.....	107
Gaskets, plate heat exchanger.....	148
Gaskets, ring.....	107
Gaskets, rubber.....	107
Gaskets, sheet.....	107
Gaskets, silicone.....	107
Gates, hopper.....	114
Gears.....	120
Generator drives, steam.....	120
Generator-turbine sets.....	121
Generators, electrical.....	121
Generators, hydrogen.....	156
Generators, nitrogen.....	156
Generators, oxygen.....	156
Generators, ozone.....	156
Generators, steam.....	148
Generators, synthesis gas.....	156
Geotechnical services.....	183
Glass.....	166
Glasses, furnace.....	129
Glasses, sight flow.....	129
Glove boxes.....	173
Gloves.....	173
Gold & alloys.....	168
Granulators & granulating mills.....	115
Groundwater remediation.....	183

H

Hangers, pipe & tube.....	102
Harnesses.....	173
Hazard audits.....	183
Hazardous waste services.....	183
Hazardous-waste management.....	179
Heads, process vessel.....	156
Heat exchanger parts & accessories.....	146
Heat exchangers, air cooled.....	146
Heat exchangers, all-welded.....	146
Heat exchangers, bayonet.....	146
Heat exchangers, cascade.....	146
Heat exchangers, ceramic.....	146
Heat exchangers, coil.....	146
Heat exchangers, condensers & coolers.....	145
Heat exchangers, direct contact steam.....	146
Heat exchangers, double pipe.....	146

PRODUCT & SERVICE INDEX

Heat exchangers, falling film.....	146	Hoods, fume collectors.....	100	Insulation, coatings & sealers.....	167
Heat exchangers, finned tube.....	146	Hoppers.....	114	Insulation, glass fiber.....	167
Heat exchangers, glass.....	146	Hoppers, weighing.....	115	Insulation, high temperature.....	167
Heat exchangers, graphite.....	146	Hose fittings.....	101	Insulation, low temperature.....	167
Heat exchangers, jacketed pipe.....	147	Hose reels.....	172	Insulation, refractory.....	167
Heat exchangers, plate.....	147	Hose, air.....	101	Insulation, urethane foam.....	167
Heat exchangers, plate coil.....	147	Hose, chemically resistant.....	101	Intermediate bulk containers.....	117
Heat exchangers, plate fin.....	147	Hose, electrically heated.....	101	Intermodal bulk containers.....	117
Heat exchangers, PTFE tube.....	146	Hose, high pressure.....	101	Ion exchanger equipment.....	164
Heat exchangers, scraped surface.....	147	Hose, jacketed.....	101	Ion measurement or selection.....	130
Heat exchangers, screw flight.....	147	Hose, metallic.....	101	Iron & iron alloys.....	167
Heat exchangers, shell & tube.....	147	Hose, nonmetallic, fluoroplastic.....	101	ISO certification.....	177
Heat exchangers, spiral.....	147	Hose, pneumatic conveyors.....	116	ISO compliance.....	179
Heat exchangers, tantalum.....	147	Hose, sanitary.....	101		
Heat exchangers, titanium.....	147	Hose, steam.....	101	J	
Heat exchangers, U tube.....	146	Hose, vacuum.....	101	Jacketing, insulation.....	167
Heat exchangers, zirconium.....	147	Hose, water.....	101	Joints, swivel.....	102
Heat transfer fluids, cooling fluids.....	148	Hot oils.....	148	Joints, universal.....	120
Heat transfer fluids, heating fluids.....	148	Humidifiers.....	134		
Heat transfer fluids, other.....	148	Hybrid process control computers.....	126	K	
Heat transfer media.....	148	Hydrogen.....	187	Kettles, agitated.....	156
Heat transfer systems.....	147	Hydrogen generation units.....	158	Kettles, caustic.....	156
Heat-exchange modeling.....	179	Hydrogen sulfide removal systems.....	182	Kettles, crystallizing.....	156
Heaters, air & gas.....	148	Hydrogenation plants.....	156	Kettles, electrically heated.....	156
Heaters, bayonet.....	148	Hydrogenation reactors.....	156	Kettles, jacketed.....	156
Heaters, cartridge.....	148	Hypochlorinators.....	164	Kettles, melting.....	156
Heaters, convection.....	148			Kettles, special metals.....	156
Heaters, direct fired.....	148	I		Kettles, vacuum.....	156
Heaters, drum.....	148	Incinerators.....	183	Kiln, oven & furnace accessories.....	150
Heaters, electric immersion.....	121	Incinerators, gas & liquid.....	183	Kilns, fluidizing.....	150
Heaters, feedwater.....	148	Incinerators, sludge.....	183	Kilns, rotary.....	150
Heaters, finned tube.....	148	Indicators.....	127	Kilns, vertical transfer.....	150
Heaters, gas fired.....	148	Indicators, bin level.....	129		
Heaters, helical coil.....	148	Indicators, carbon monoxide.....	129	L	
Heaters, immersion.....	149	Indicators, combustible gases.....	129	Laboratory information management.....	180
Heaters, indirect fired (waterbath).....	149	Indicators, dewpoint or humidity.....	129	Laminar Flow Enclosures.....	100
Heaters, induction.....	149	Indicators, flow.....	129	Lamps, incandescent.....	121
Heaters, infrared.....	149	Indicators, liquid level.....	129	Lamps, infrared.....	121
Heaters, instantaneous.....	149	Indicators, mass flow.....	129	Lamps, mercury vapor.....	121
Heaters, jacketed.....	149	Indicators, moisture.....	129	Lamps, photochemical.....	121
Heaters, microwave.....	147	Indicators, other.....	129	Lamps, sodium vapor.....	121
Heaters, molten salt.....	149	Indicators, pressure.....	129	Lamps, ultraviolet.....	121
Heaters, pipeline.....	149	Indicators, solids level.....	129	Laser systems.....	130
Heaters, plate.....	149	Indicators, specific gravity.....	129	Lead & alloys.....	168
Heaters, portable.....	149	Indicators, temperature.....	129	Leak sealing service.....	172
Heaters, process liquid.....	147	Indicators, vacuum.....	129	Lift tables.....	115
Heaters, process slurry.....	147	Indicators, valve position.....	129	Lift trucks.....	115
Heaters, sandwich type.....	149	Indicators, viscosity.....	129	Lift trucks, explosion proof.....	115
Heaters, screw flight.....	149	Indicators, weight.....	129	Lifting equipment.....	117
Heaters, spiral.....	149	Indium & alloys.....	168	Lighting equipment, emergency.....	121
Heaters, steam injection.....	149	Indoor-air-quality services.....	183	Lighting fixtures.....	121
Heaters, tank car.....	149	Information management.....	179	Lighting, explosion proof.....	121
Heaters, thermal fluid electric.....	121	Information Services.....	177	Lighting: panelboards,	
Heaters, thermal liquid.....	149	Information Technology.....	179	instruments & gages.....	121
Heaters, tubular.....	149	Infrared Thermometer.....	130	Linens, pond.....	184
Heaters, unit.....	149	Inhibitors, corrosion.....	187	Lining applications, custom.....	135
Heaters, Water.....	147	Input & output equipment,		Linings, basalt.....	170
Heating & cooling equipment, other ..	148	data processing.....	178	Linings, cements & mortars.....	170
Helium.....	187	Input-output equipment.....	126	Linings, ceramic.....	170
Hierarchical process		Inserts, heat-exchanger tube.....	147		
control computers.....	126	Inspection.....	177		
High alloy steels.....	170	Insulation materials.....	167		
Hogs.....	161	Insulation, acoustical.....	172		
Hoists.....	117	Insulation, asbestos replacement.....	167		
Homogenizers.....	150				
Homogenizers, high pressure.....	150				

PRODUCT & SERVICE INDEX

Linings, chlorosulfonated polyethylene	170	Meters, turbidity	131	Mixers, slurry	152
Linings, epoxy	170	Meters, ultrasonic	131	Mixers, spiral ribbon	154
Linings, fluoroplastic	170	Meters, ultraviolet	131	Mixers, spiral screw	155
Linings, glass	170	Meters, vibration	131	Mixers, static	152
Linings, glass-reinforced plastic	170	Meters, water	131	Mixers, top entering	152
Linings, polyethylene	170	Meters, zeta potential	131	Mixers, turbine	152
Linings, refractory	170	Microfiltration equipment	144	Mixers, vacuum	153
Linings, urethane	170	Mills, attrition	161	Mixers, vacuum tumble	155
Linings, vinyl	170	Mills, ball	161	Mixers, vertical stationary	155
Liquid-liquid processing	134	Mills, cage	161	Mixers: barrel, drum, carboy	151
Liquid-mixer parts & accessories	150	Mills, colloid	161	Mixing equipment for fluids	150
Load cells	130	Mills, cone	162	Mixing equipment for gas, air	153
Loaders, car	115	Mills, disc	162	Mixing equipment for solids & fluids	153
Louvers, noise control	172	Mills, grinding	162	Modular Clean Labs	177
Low alloy steels	170	Mills, hammer	162	Molybdenum & alloys	168
Lubricants	168	Mills, homogenizing	162	Monitors, air quality	125
Lubricants, engine oil	168	Mills, impact	162	Monitors, ammonia	125
Lubricants, greases	168	Mills, jacketed ball	162	Monitors, carbon dioxide or monoxide	125
Lubricants, industrial oils	168	Mills, jet	162	Monitors, chlorine	125
Lubricants, process oils	168	Mills, other	162	Monitors, colorimetric	125
Lubricating equipment	172	Mills, pebble	162	Monitors, combustible gases, or vapors	125
Lumpbreakers	161	Mills, pug	162	Monitors, composition	125
Lumpbreakers for solid & liquid systems	161	Mills, ring roll	162	Monitors, conductivity	125
		Mills, rod	162	Monitors, dispersion	125
		Mills, roller	162	Monitors, dust	125
		Mills, tube	162	Monitors, emissions, continuous	125
		Mills, tumbling	162	Monitors, humidity	125
		Mills, vertical	162	Monitors, hydrocarbon content	125
		Mist eliminators	140	Monitors, hydrogen cyanide content	125
		Mixer-settlers	159	Monitors, hydrogen sulfide content	125
		Mixers, air driven	151	Monitors, mercury content	125
		Mixers, anchor	151	Monitors, octane	125
		Mixers, batch	151	Monitors, oil content	125
		Mixers, bottom entering	151	Monitors, opacity	125
		Mixers, chilled	151	Monitors, organic carbon, total	125
		Mixers, cone	151	Monitors, oxygen content	125
		Mixers, continuous	151	Monitors, particle size	125
		Mixers, continuous kneaders	153	Monitors, pH	125
		Mixers, disc	151	Monitors, stack gases	125
		Mixers, double arm kneaders	153	Monitors, sulfur	125
		Mixers, gas-liquid, high intensity	152	Monitors, viscosity	125
		Mixers, gate	152	Monitors, VOCs	125
		Mixers, gravity flow	153	Monitors, water quality	125
		Mixers, heated	152	Monomer-recovery systems	159
		Mixers, high shear	154	Motor controls	121
		Mixers, High Viscosity	151	Motors, A.C.	121
		Mixers, jet	152	Motors, D.C.	121
		Mixers, magnetically coupled	154	Motors, electric	121
		Mixers, motionless	154	Motors, explosion proof	121
		Mixers, other solid-liquid	154	Motors, submersible	121
		Mixers, paddle	152	Motors, variable speed	121
		Mixers, pan	154	Motors, vertical	121
		Mixers, pipeline (inline)	152	Mullers	155
		Mixers, planetary	154		
		Mixers, pony	152		
		Mixers, portable	152		
		Mixers, pressure	152		
		Mixers, propeller	152		
		Mixers, ribbon	154		
		Mixers, roller	154		
		Mixers, rotary blade	154		
		Mixers, rotary disc	154		
		Mixers, rotary drum	154		
		Mixers, screw	154		
		Mixers, sealless	154		
		Mixers, side entering	152		

M

N

PRODUCT & SERVICE INDEX

Nitrogen.....	187	Palladium & alloys.....	168	Plant decommissioning and dismantling.....	177
Noise & vibration suppression equipment.....	172	Pallet trucks.....	115	Plant documentation services.....	177
Noise enclosures & barriers.....	173	Palletizers.....	118	Plant maintenance services.....	172
NOx control systems.....	182	Paper, filter.....	142	Plant optimization.....	180
Nozzles, atomizing.....	159	Particle size control systems.....	134	Plant relocation.....	177
Nozzles, fire fog.....	173	Particulate removal systems.....	182	Plastic fabrication, custom.....	136
Nozzles, mixing.....	159	Patching compounds.....	172	Plastics materials.....	169
Nozzles, spray.....	159	Pelletizers.....	116	Plastics, other.....	169
Nylon.....	169	Permeation tubes.....	131	Plates, filter.....	142
O					
Odor-control chemicals.....	187	Pervaporation equipment.....	159	Platinum & alloys.....	168
Odor-control systems.....	182	Photometers.....	131	Polycarbonates.....	169
Oil purification equipment.....	159	Physical properties.....	180	Polyesters.....	169
Oil skimmers.....	184	Pigments.....	187	Polyethylenes.....	169
Online diagnostics of columns.....	164	Pilot plant services.....	177	Polymerizers.....	157
Organic intermediates.....	187	Pipe & pipe systems, custom.....	136	Polypropylenes.....	169
Other electrical equipment.....	121	Pipe adapters.....	102	Polytetrafluoroethylene.....	169
Ovens, drying.....	150	Pipe fittings & couplings, metallic & nonmetallic.....	101	Porcelain & stoneware, chemical.....	166
Ovens, electric.....	150	Pipe fittings, emergency repair.....	102	Positive Displacement Pumps.....	103
Ovens, infrared.....	150	Pipe fittings, graphite.....	102	Powder Testing.....	131
Ovens, microwave.....	150	Pipe fittings, high pressure.....	102	Powders, ceramic.....	166
Ovens, radiant heating.....	150	Pipe fittings, jacketed.....	102	Power supplies, emergency.....	121
Ovens, vacuum.....	150	Pipe fittings, lined.....	102	Precipitators, water treating.....	164
Oxidation plants.....	157	Pipe fittings, nonmetallic.....	102	Preheaters.....	147
Oxidation reactors.....	157	Pipe fittings, sanitary.....	102	Preservatives.....	187
Oxidizers, catalytic.....	157	Pipe markers.....	173	Pressure Relief.....	173
Oxidizers, catalytic.....	184	Pipe strainers.....	102	Pressure vessel design.....	180
Oxidizers, regenerative.....	157	Pipe, ABS.....	102	Pressure vessel repair.....	172
Oxidizers, thermal.....	184	Pipe, alloy steel.....	102	Process chemicals.....	185
Oxygen.....	187	Pipe, aluminum.....	102	Process control.....	180
Ozonators.....	164	Pipe, aluminum & aluminum alloys.....	102	Process optimization.....	180
Ozone.....	187	Pipe, aluminum alloy.....	102	Process safety management.....	180
P					
Packaging containers.....	117	Pipe, carbon steel.....	102	Process safety management services.....	177
Packaging equipment, liquids.....	117	Pipe, carbon steel, seamless.....	102	Process simulation.....	180
Packaging equipment, solids.....	117	Pipe, ceramic lined.....	102	Process simulation systems.....	180
Packers, bag.....	117	Pipe, ceramic-metal.....	102	Process vessels & reactors.....	155
Packers, vibrating.....	117	Pipe, chlorinated PVC.....	102	Production scheduling.....	180
Packings, braided.....	107	Pipe, containment.....	102	Project management.....	180
Packings, carbon.....	107	Pipe, copper.....	102	Proportioners.....	118
Packings, cooling tower.....	155	Pipe, copper & copper alloys.....	102	Protective coatings & linings.....	169
Packings, molded.....	107	Pipe, custom fabricated.....	102	Publishing.....	177
Packings, plastic.....	107	Pipe, finned.....	102	Pultrusion, custom.....	136
Packings, pump.....	107	Pipe, flanged.....	102	Pump parts & fittings.....	102
Packings, ring.....	107	Pipe, glass.....	102	Pump repair.....	172
Packings, structured.....	107	Pipe, glass lined.....	102	Pumps, acid, corrosive.....	103
Packings, tower & column, ceramic.....	155	Pipe, graphite.....	102	Pumps, air driven.....	103
Packings, tower & column, metal.....	155	Pipe, hard rubber.....	102	Pumps, axial flow.....	103
Packings, tower & column, plastic.....	155	Pipe, high-alloy steel.....	102	Pumps, battery-powered.....	103
Packings, tower & column, random.....	155	Pipe, jacketed.....	102	Pumps, canned motor.....	103
Packings, tower & column, structured.....	155	Pipe, lined.....	102	Pumps, carboy or drum.....	103
Packings, trays for towers & columns.....	155	Pipe, nickel & nickel alloy.....	102	Pumps, centrifugal.....	102
Packings, valve stem.....	107	Pipe, nonmetallic.....	102	Pumps, centrifugal, ANSI.....	102
Pads, filter.....	142	Pipe, other.....	102	Pumps, centrifugal, double suction.....	103
Pails & cans.....	117	Pipe, other nonferrous metals.....	102	Pumps, centrifugal, dry running.....	103
Paints.....	170	Pipe, plastic.....	102	Pumps, centrifugal, inline.....	103
		Pipe, plastic lined.....	102	Pumps, centrifugal, multistage.....	103
		Pipe, polyethylene.....	102	Pumps, centrifugal, process, medium duty.....	103
		Pipe, polypropylene.....	102	Pumps, centrifugal, self-priming.....	103
		Pipe, polyvinylidene fluoride.....	102	Pumps, centrifugal, single stage.....	103
		Pipe, prefabricated.....	102	Pumps, ceramic.....	105
		Pipe, PTFE.....	102	Pumps, ceramic lined.....	103
		Pipe, rubber.....	102	Pumps, channel impeller.....	103
		Pipe, sanitary.....	102	Pumps, condensate return.....	103
		Pipe, stainless steel.....	102	Pumps, cryogenic.....	103
		Pipe, vinyl ester - glass.....	102	Pumps, dewatering, submersible.....	106
		Pipeline rehabilitation processes.....	172		

PRODUCT & SERVICE INDEX

Scales, tank.....	118	Silver & alloys.....	168	Static detection & elimination systems.....	173
Scales, totalizing.....	118	Simulators.....	179	Static eliminators.....	187
Scales, truck.....	118	Sinks, eye or face emergency.....	173	Steam jet ejectors.....	106
Screening.....	159	Size reduction equipment.....	161	Steam traps.....	107
Screening equipment.....	159	Sleeves, pump.....	102	Steam traps, disc.....	107
Screens, air.....	159	Sludge dewaterers.....	184	Steam traps, float.....	107
Screens, bar.....	159	Sludge dryers.....	184	Steam traps, float & thermostatic.....	107
Screens, centrifugal.....	159	Sludge handling.....	183	Steam traps, inverted bucket.....	107
Screens, cylindrical.....	159	Smoke detection systems.....	172	Steam traps, orifice devices.....	107
Screens, grizzly.....	159	Software development.....	180	Steam traps, thermostatic.....	107
Screens, gyratory.....	159	Software, other.....	180	Steels.....	170
Screens, milled slot.....	159	Soil remediation.....	183	Sterilizers.....	149
Screens, perforated plate.....	159	Solid-liquid-mixer parts & accessories.....	155	Storage cabinets.....	173
Screens, rotary.....	159	Solids feeders, airlock.....	116	Storage systems.....	118
Screens, stationary.....	159	Solids feeders, batch.....	116	Strainers.....	145
Screens, synthetic.....	159	Solids feeders, constant weight.....	117	Strippers, air.....	159
Screens, testing.....	159	Solids feeders, continuous flow.....	117	Strippers, air.....	184
Screens, vibrating.....	159	Solids feeders, dosing.....	117	Strips, electric heating.....	121
Screens, wire.....	159	Solids feeders, gravimetric.....	117	Stud tensioners, hydraulic.....	172
Screw presses.....	145	Solids feeders, high-pressure.....	117	Sublimers.....	158
Scrubbers.....	160	Solids feeders, proportioning.....	117	Sulfur Recovery.....	182
Scrubbers, centrifugal.....	160	Solids feeders, rotary.....	117	Sumps, acid neutralizing.....	184
Scrubbers, conical.....	160	Solids feeders, vibrating or oscillating.....	117	Supercritical fluid extraction processing.....	159
Scrubbers, cyclone.....	160	Solids feeders, volumetric.....	117	Superheaters.....	147
Scrubbers, fluidized bed.....	160	Solids handling equipment & systems, other.....	117	Supervisory process control computers.....	126
Scrubbers, fume, gas.....	160	Solvent extraction systems.....	159	Supply chain management.....	180
Scrubbers, impingement baffle.....	160	Solvent recovery systems.....	159	Surface active agents, anionic.....	187
Scrubbers, jet.....	160	Solvent recycling systems.....	159	Surface active agents, nonionic.....	187
Scrubbers, oil mist.....	160	Solvents, alcohols.....	187	Surface active agents, not further specified.....	187
Scrubbers, orifice.....	160	Solvents, drug extracting.....	187	Surface active agents, other.....	187
Scrubbers, packed column.....	160	Solvents, electronic.....	187	Sweepers.....	171
Scrubbers, plate column.....	160	Solvents, ethers.....	187	Switches, electrical.....	121
Scrubbers, rotary.....	160	Solvents, fluorinated.....	187	Switchgear & other power distribution equipment.....	121
Scrubbers, spray.....	160	Solvents, glycol ether.....	187	Syngas generation units.....	159
Scrubbers, venturi.....	160	Solvents, high flash.....	187		
Scrubbers, wire mesh tray.....	161	Solvents, hydrocarbons.....	187		
Sealants.....	170	Solvents, insecticide.....	187		
Seals, balanced pressure.....	107	Solvents, ketones.....	187		
Seals, bearing.....	107	Solvents, nonflammable.....	187		
Seals, bellows.....	107	Solvents, nontoxic.....	187		
Seals, diaphragm.....	107	Solvents, odorless.....	187		
Seals, gaskets & packing materials.....	107	Solvents, other.....	187		
Seals, magnetic.....	107	Solvents, oxygenated.....	187		
Seals, mechanical.....	107	Spectrometer accessories or services.....	125		
Seals, noncontacting.....	107	Spectrometers.....	125		
Seals, shaft.....	107	Speed reducers.....	120		
Seals, spring.....	107	Spheres, high-pressure gas.....	107		
Selenium & alloys.....	168	Spill collectors, tank car.....	184		
Separators.....	158	Spill Containment.....	173		
Separators for metals.....	159	Spill contingency, emergency response.....	183		
Separators, magnetic.....	159	Spill control & emergency response.....	183		
Separators, oil-water.....	184	Spill prevention equipment.....	184		
Sewage treating units.....	184	Spill response kits.....	172		
Shaft-alignment equipment.....	172	Spray equipment, thermal.....	172		
Shafting.....	120	Spray nozzles, cooling tower.....	135		
Shoes, safety.....	173	Sprayers.....	159		
Showers, emergency.....	173	Sprinkler systems.....	172		
Shredders.....	162	Stainless steels.....	170		
Sieves.....	160	Stainless steels, AISI 200 series.....	170		
Sifters, sifting machines.....	160	Stainless steels, AISI 300 series.....	170		
Silencers, exhaust.....	173	Stainless steels, AISI 400 series.....	170		
Silencers, inline.....	173	Stainless steels, cast.....	170		
Silencers, intake.....	173				
Silicon carbide.....	167				
Silicones.....	169				
Silos.....	115				

T

Tank cleaning & removal.....	107
Tank fittings & accessories.....	107
Tanks & other liquid storage vessels.....	107
Tanks, air.....	107
Tanks, aluminum.....	107
Tanks, bladder.....	107
Tanks, carbon steel.....	107
Tanks, cryogenic.....	108
Tanks, cryogenic, vacuum jacketed.....	108
Tanks, custom fabricated.....	108
Tanks, dimple jacketed.....	108
Tanks, dome roof.....	108
Tanks, double containment.....	108
Tanks, epoxy lined.....	108
Tanks, epoxy-fiberglass.....	108
Tanks, field-erected.....	108
Tanks, floating roof.....	108
Tanks, fluoroplastic.....	108
Tanks, galvanized.....	108
Tanks, glass lined.....	108
Tanks, heated.....	108
Tanks, internal floating deck.....	108
Tanks, mixing.....	108
Tanks, nickel or nickel alloys.....	108

PRODUCT & SERVICE INDEX

Tanks, other	108
Tanks, phenolic lined.....	108
Tanks, polyethylene.....	108
Tanks, polypropylene.....	108
Tanks, pressurized storage.....	108
Tanks, PVC.....	107
Tanks, rubber lined.....	108
Tanks, settling.....	184
Tanks, stainless steel.....	108
Tanks, stainless steel, lined.....	108
Tanks, tapered wall.....	108
Tanks, vinyl ester - fiberglass.....	108
Tanks, water.....	108
Tantalum & alloys.....	168
Tape, electric heating.....	121
Technology licensing.....	177
Telemetering & data	
transmission systems.....	132
Tellurium.....	168
Temperature Sensor.....	131
Testers, cloud & pour point,	
automatic.....	131
Testers, flash point.....	131
Testers, hardness.....	131
Testers, tensile strength.....	131
Testing equipment, corrosion.....	172
Testing equipment, dust.....	173
Testing equipment,	
emergency valves.....	173
Testing equipment, gases & vapors.....	173
Testing equipment, high pressure.....	172
Testing equipment, nondestructive.....	172
Testing equipment, other.....	131
Testing instruments, vibration.....	173
Thallium.....	168
Thermal fluids.....	148
Thermistors.....	129
Thermocouples.....	129
Thermometers, bimetallic.....	129
Thermometers, dial.....	129
Thermometers, digital.....	129
Thermometers, electrical.....	129
Thermometers, infrared.....	129
Thermometers, mercury.....	129
Thermometers, precision.....	129
Thermometers, recording.....	129
Thermometers, resistance	
temperature detectors.....	129
Thermometers, surface.....	129
Thermoplastic elastomers.....	169
Thermostats.....	129
Thermowells.....	130
Thickeners, cellulose ethers.....	187
Thickeners, centrifugal.....	135
Thickeners, gravity.....	135
Thickeners, other.....	187
Thickeners, rake or sedimentation.....	135
Thickeners, thixotropes.....	187
Tile.....	167
Timers.....	131
Tin & alloys.....	168
Titanium & alloys.....	168
Tools & equipment, other.....	172
Tools, hand.....	172
Totalizers.....	127
Tower parts & accessories.....	164

Towers & columns.....	163
Tracing, pipe.....	149
Training.....	177
Training personnel, maintenance.....	177
Training personnel,	
pollution control.....	177
Training personnel,	
safety & health.....	177
Training services.....	183
Training systems, plant operators.....	177
Transducers.....	132
Transducers, heat flow.....	131
Transformers.....	121
Transmissions.....	120
Transmitters & data	
transmission equipment.....	132
Transmitters, level.....	132
Transmitters, mass flow.....	132
Transmitters, pressure.....	132
Transmitters, pressure-critical.....	132
Transmitters, temperature.....	132
Traps, air.....	140
Trays & tower internals.....	155
Troughs, cooled or heated.....	147
Trucks.....	115
Tube fittings.....	108
Tube sheets.....	108
Tubes, filter.....	142
Tubing & tube fittings, metallic &	
nonmetallic.....	108
Tubing, boiler.....	108
Tubing, condenser.....	108
Tubing, evaporator.....	108
Tubing, ferrous.....	108
Tubing, finned.....	108
Tubing, flexible metal.....	108
Tubing, heat exchanger.....	108
Tubing, high pressure.....	109
Tubing, high temperature.....	109
Tubing, instrument.....	109
Tubing, nonmetallic.....	109
Tubing, plastic.....	109
Tubing, pneumatic.....	109
Tubing, refractory.....	109
Tubing, rubber.....	109
Tubing, seamless.....	109
Tubing, silicone.....	109
Tubing, vacuum.....	109
Tubing, welded.....	109
Tungsten & alloys.....	168
Turbines, combined steam-gas.....	120
Turbines, mechanical drive, gas.....	120
Turbines, mechanical drive, steam.....	120

U

Ultrafiltration systems.....	164
Ultraviolet disinfection systems.....	164
Unions, pipe.....	102
Unloaders, barge.....	115
Unloaders, bulk bag.....	115
Unloaders, hopper car.....	115
Unloaders, other.....	115
Unloaders, tank car.....	115
Unloaders, tank truck.....	115

V

Vacuum cleaning systems.....	172
Vacuum pumping systems.....	106
Valve & flange covers.....	173
Valve operators, diaphragm.....	123
Valve operators, electrohydraulic.....	123
Valve operators, electropneumatic.....	123
Valve operators, motor operated.....	123
Valve operators, piston.....	123
Valve operators, pneumatic.....	123
Valve operators, solenoid.....	123
Valve parts & fittings.....	109
Valve positioners, microprocessor	
equipped.....	123
Valve positioners, other.....	123
Valve repair.....	172
Valve-locking devices.....	109
Valve, position indicators.....	123
Valves.....	109
Valves, air.....	109
Valves, airlock flap-gate.....	109
Valves, airlock rotary.....	109
Valves, angle.....	110
Valves, backflow.....	110
Valves, ball.....	110
Valves, bellows sealed.....	110
Valves, butterfly.....	110
Valves, cage.....	110
Valves, ceramic lined.....	110
Valves, check.....	110
Valves, control, electric.....	110
Valves, control, hydraulic.....	110
Valves, control, pneumatic.....	110
Valves, control, regulator.....	110
Valves, control, solenoid.....	111
Valves, cryogenic.....	111
Valves, diaphragm.....	111
Valves, diverter.....	111
Valves, diverter conveyor.....	118
Valves, double block & bleed.....	111
Valves, electrically heated.....	111
Valves, flush-bottom tank.....	111
Valves, gate.....	111
Valves, glass.....	111
Valves, glass lined.....	111
Valves, globe.....	111
Valves, heat actuated, fail safe.....	111
Valves, high pressure.....	111
Valves, high temperature.....	111
Valves, hopper.....	111
Valves, iris.....	111
Valves, jacketed.....	111
Valves, knife-gate.....	111
Valves, metal seated.....	111
Valves, mixing.....	112
Valves, motor operated.....	112
Valves, multiport.....	112
Valves, needle.....	112
Valves, nuclear.....	112
Valves, other.....	112
Valves, packless.....	112
Valves, pilot operated.....	112
Valves, pinch.....	112
Valves, plastic.....	112
Valves, plastic lined.....	112

PRODUCT & SERVICE INDEX

Valves, plug	112
Valves, pneumatic	112
Valves, powder	118
Valves, pressure reducing.....	112
Valves, proportional.....	112
Valves, pump protection.....	112
Valves, quick closing.....	112
Valves, ram	112
Valves, recirculation, automatic.....	112
Valves, relief	112
Valves, rubber lined.....	113
Valves, safety.....	113
Valves, sampling	113
Valves, slide.....	113
Valves, slurry	113
Valves, tank blanketing.....	113
Valves, tank venting.....	113
Valves, titanium.....	113
Valves, vacuum	113
Valves, vacuum relief.....	113
Valves, vent, low pressure.....	113
Valves, zirconium.....	113
Vapor recovery systems.....	182
Vented Enclosures.....	173
Ventilation systems.....	100
Vessel heads	158
Vessels, plastic lined	158
Vessels, pressure, cryogenic	158
Vessels, pressure, custom	158
Vessels, pressure, jacketed, dimple	158
Vessels, pressure, multilayered heavy wall	158
Vessels, pressure, safety sight glass	158
Viscometers, melt.....	131
Viscosity or consistency instruments, other	131
VOC control.....	183
Voltmeters.....	131

Water-pollution control services	183
Weighing, feeding & proportioning equipment.....	118
Weld heat-treating	172
Welding equipment	172
Wet Electrostatic precipitators.....	140
Wire cloth.....	160
Wire mesh.....	160
Wrought iron	168

X

X ray & gamma ray equipment.....	131
----------------------------------	-----

Z

Zeolites	187
Zinc & alloys.....	169
Zirconium.....	169

W

Wall materials, chemically resistant....	168
Washers.....	172
Washers, continuous belt.....	158
Washers, horizontal vacuum filter.....	158
Washers, spray.....	158
Waste handling equipment & systems	183
Waste heat recovery units	147
Waste minimization & recycling.....	183
Waste testing & analysis	183
Waste transportation	183
Waste treatment facilities, other	183
Waste-recovery treating systems	184
Wastewater neutralization systems	184
Water pollution control equipment & systems	184
Water pollution systems	164
Water treatment chemicals.....	187
Water treatment control equipment....	164
Water treatment equipment.....	164
Water-conditioning package systems.....	164

THINK ABOUT YOUR NEXT PROJECT



500mm X 250mm Rousselet Robatel
Peeler Centrifuge, Hastelloy C22



150 Gal. Ross Double Planetary Mixer,
Model DPM 150, 316L S/S, Unused

Examples of Typical Inventory



10,000 Gal DCI Storage Tank, 316L S/S

When you
think equipment,
think Federal
Equipment

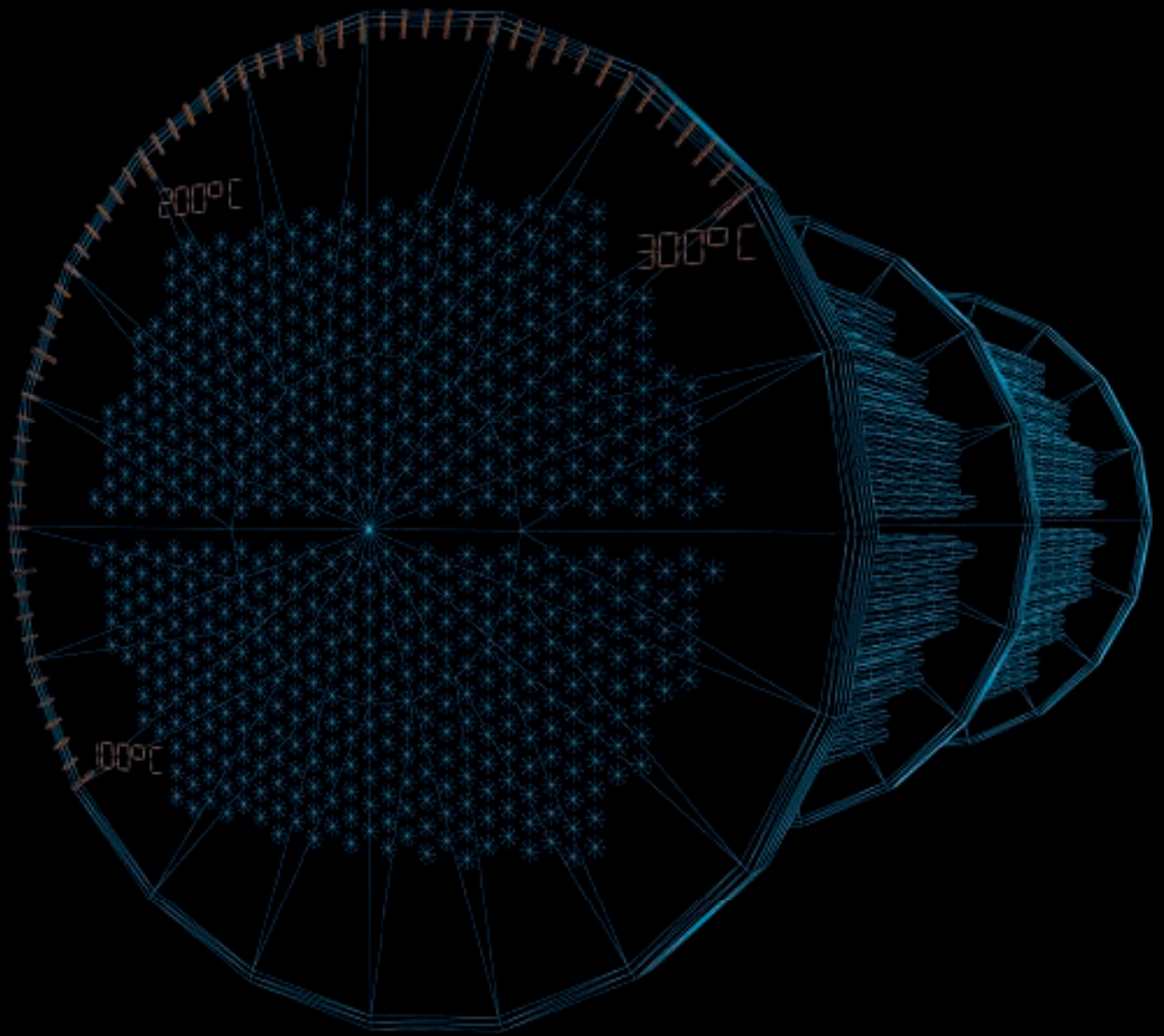
We Sell High-Quality Machinery
We Buy Surplus Equipment

www.fedequip.com

+1 877 503 9745

For more information, email us at
chemical@fedequip.com

Circle 24 on p. 190 or go to adlinks.chemengonline.com/56204-24



WHEN CONDITIONS HEAT UP DON'T LET CORROSION SHUT YOU DOWN

Whether it's higher temperatures, rising pressures or more acidic media, conditions in oil refineries have never been more extreme. Tube and pipe corrosion are a constant threat, causing as many as half of all major shutdowns. This is why hundreds of the world's most demanding petrochemicals refiners are turning to the next generation of corrosion resistant alloys. Like one German oil refinery, which used Sandvik SAF 2707 HD hyper-duplex heat exchanger tubes to reduce the number of shutdowns from 8 to 1 over a period of four years. The result was massive savings on material replacement. So as your tubes' performance is pushed to new heights, find out how we can help keep corrosion from shutting you down.

SMT.SANDVIK.COM

Circle 31 on p. 190 or go to adlinks.chemengonline.com/56204-31





buyers guide corporate capabilities

American Elements

American Elements
 1093 Broxton Ave. Suite 2000
 Los Angeles, CA 90024
 Telephone: 310-208-0551
 Email: customerservice@americanelements.com
 Website: www.americanelements.com



THE WORLD LEADER IN ADVANCED MATERIALS

American Elements is the world leader in engineered & advanced materials with a catalogue of over 12,000 materials including advanced polymer additives and dopants, high purity metals, chemicals, semiconductors and minerals, nanoparticles, organo-metallics and crystal-grown materials for commercial applications such as plastics, resins, ultra light and ultra strong composites and alloys, ceramics and compounds for automotive, aerospace, military, medical, electronic, green/clean technologies and solar energy applications. American Elements maintains research and laboratory facilities in the U.S. and manufacturing/warehousing in the U.S., Europe, China & Brazil.

ENGINEERED MATERIALS ON A COMMERCIAL SCALE

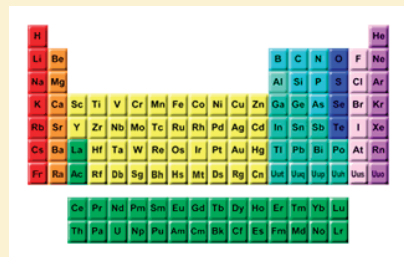
Since our production begins at the mine in our mineral refining and chemical separations operations in China, Mexico and the U.S., your cost will remain as low as your specifications demand. The combination of world class U.S. based research, development, analysis and certification with a fully integrated global



manufacturing operation allows us to both certify to the highest possible U.S. standards and at the same time provide materials at the lowest possible world prices.

The company's 10,850 page online catalog is annually viewed by more than 1.2 million visitors and more than 30,000 Twitter followers.

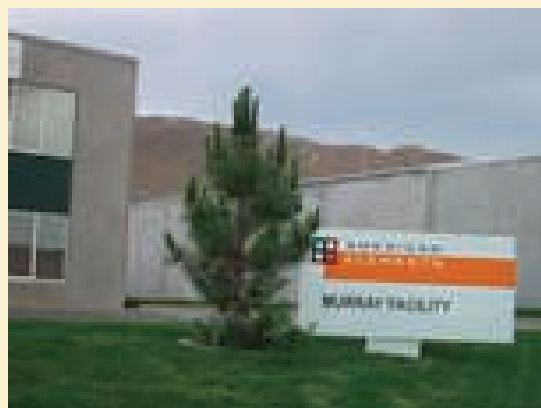
American Elements' thousands of customers include 30 percent of the Fortune 50 list of America's largest corporations and all U.S. national labs and military branches



A PASSION FOR SCIENCE

American Elements' Academics & Periodicals Department supports materials science education at the high school, college and graduate school levels. This year the company co-sponsored a four-part PBS series on NOVA titled "Making Stuff" examining the world of materials science. Over the last twelve months alone, American Elements has co-sponsored 74 industry and academic conferences in 25 countries in fields such as electronics, aerospace, medical/pharmaceutical, optics and advanced military technology.

the factory. Smaller heaters are shipped as a complete package. Larger heaters are disassembled into three major components. This makes installation easy and less costly.



Dipesh Engineering Works



3rd Floor Sej Plaza,
Near S.V. Road & Marve Road Junction,
Near Nutan High School,
Malad West, Mumbai 400 064. INDIA
Tel: +91 - 22 - 4073 6736 |
Fax: +91 - 22 - 4073 6737
E-mail: sales@dipeshengg.net
Web: www.dipeshengg.com

Chemical process engineering challenges are vast, extremely complex and need quick resolutions. At Dipesh Engineering Works, we understand these complexities and the quick turnaround needs. We have supported our customers since last 30 years helping them navigate these challenges. Through our deep knowledge, design and production capabilities, and extensive experience, we are able to manufacture and supply coded process equipment, systems and skids for a variety of applications in chemicals, petrochemicals, steel, power, aviation, pharmaceuticals, water, and dye intermediates and pigments industries.

PERFORMING PRODUCTS SINCE 30 YEARS

Thousands of our equipment and technologies built in our Group's ASME "U" Stamp certified shop, have stood the rigorous test of time. We have been delivering equipment with minimal defects for the past 30 years. Our unflinching focus on quality, unsurpassed



customer services, timely delivery and competitive pricing have earned the trust of our customers. As a result, we have several repeat customers.

DRIVING VALUE THROUGH SMART ENGINEERING

We aim to achieving shorter delivery cycles and meeting commitments. Our ROI-focused approach results in significant savings for our customers. Whether it is product or process designing, sourcing raw material, fabrication, shipping and commissioning, we can guarantee: delivery schedules, quality and requisite quantity.

QUALITY FOCUS

Our equipment conform to international Codes & Standards such as ASME/TEMA/PED 5500/API 620/API 650/DIN/EEUA Handbook / EJMA. We have good experience in third-party inspection including Lloyds, TUV, SGS, Jacobs H&G, BVIS, AKER, SAIPEM and TCS.

Versatile Customized Products

- Reaction vessels with or without agitators
- High pressure reactors / Hydrogenators
- Shell & tube heat exchangers
- Autoclaves with quick opening doors
- Pressure vessels
- Tall vertical columns
- Rotary / Roto-cone / Spherical vacuum dryers
- Pharma & GMP Reactors & receivers
- Pressure & power piping
- API Tanks
- Skids and Assemblies
- Mid-sized turnkey projects



Exotherm Corporation

Exotherm Corporation
 888 Wilcrest Drive
 Houston, TX 77042
 Phone: 713-981-9100
 Fax: 713-981-7081
 E-mail: info@exotherm.com
www.exotherm.com

UNIFLUX/EXOTHERM

Exotherm Corporation is a leader in providing custom designed fired heaters to the chemical processing and oil and gas processing industries.



CONVECTION HEAT TRANSFER

Exotherm's Uniflux Convection Heater was developed fifty years ago to overcome the problems of overheating and degrading heat sensitive process fluids

that customers experienced with their existing fired heaters.

The Uniflux Convection Heater is custom designed for processes requiring 100,000 to 70,000,000 Btu/hr absorbed duty. The heater is designed to utilize the circulation of high velocity exhaust gases around the process tubes to produce convective heat transfer. This heat transfer is uniform around the periphery of the process tubes. The result is lower tube wall and film temperatures compared with the radiant heat transfer method used in most heaters.

NO FLAME IMPINGEMENT

The high velocity Uniflux burner has a very short flame extension, preventing flame impingement on the process tubes. This in turn reduces tube failure and coking.

EFFICIENCY

The forced draft burner operates at very low excess air. This feature allows the Uniflux Convection Heater to operate at higher efficiencies than can be achieved with conventional radiant, natural draft heaters. Uniflux Convection Heaters equipped with process pre-heat economizers can achieve efficiencies as high as 95% for some processes, and the forced draft design allows the Uniflux heater to maintain the efficiency over the entire operating range.



TURNDOWN

The normal turndown ratio of the Uniflux Convection Heater is 10:1. Turndown ratios of 40:1 can be achieved with custom designed burner controls.



SAFETY AND RELIABILITY

Each Uniflux Convection Heater is equipped with a field proven burner management system and safety controls. The heater and all of its controls are completely shop assembled. The control system is tested at the factory to ensure safe and reliable operation when installed.

LOWER INSTALLATION COSTS

The Uniflux Convection Heater is designed as a package and is completely assembled at the factory. Smaller heaters are shipped as a complete package. Larger heaters are disassembled into three major components. This makes installation easy and less costly.

FIELD SERVICE

Qualified, experienced technicians are available to assist the customer with start-up, operator training, preventative maintenance programs and trouble shooting.

APPLICATIONS

Uniflux Convection Heaters are used worldwide in numerous industries for a variety of heating applications. A few are listed below:

- Heat Transfer Fluids
- Cryogenic fluids
- LNG Liquefaction & Vaporization
- Regeneration Gas
- Crude Oil
- Natural Gas Processing
- Glycol-water
- Emulsions
- Offshore Production
- Processing
- Air & Nitrogen
- Vaporizers
- Specialty Chemical Processes



Paharpur Cooling Towers Ltd.

Paharpur Cooling Towers Ltd.
Paharpur House
8/1/B Diamond Harbour Road
Kolkata - 700 027
India
Phone: +91-33-4013 3000
Fax: +91-33-4013 3499
Email: pctccu@paharpur.com
Website: www.paharpur.com



In a world of water shortage and an increasing awareness of water problems, Paharpur has grown from a small lumber saw mill to one of the largest cooling tower manufacturers in the world.

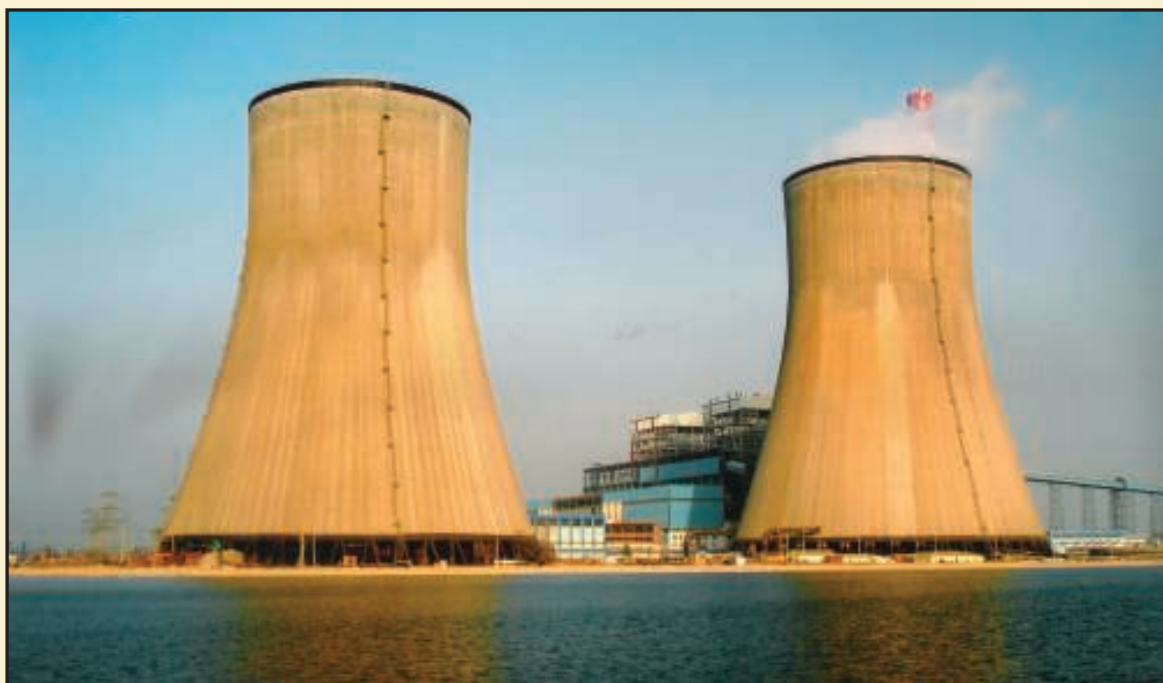
There are few problems Paharpur cannot solve related to the cooling of water or other liquids. We have a first class Research and Development centre which has consistently produced innovative concepts that have now become industry standards. All components or materials are carefully selected and tested under the adverse conditions applicable in operation. Our engineering and production standards often exceed general



standards, the objective being to supply a prime quality product which will provide low cost and reliable service to our customers over many years.

Major industries such as electricity generating, petroleum refining, chemical processing, sugar, air-conditioning and refrigeration, steel and so on use a vast assortment of cooling towers and air cooled heat exchangers. Whether you wish to cool the centralized air-conditioning plant of your building, dissipate heat from your processing plant or cool the water in your industrial complex, we at Paharpur are at your service.

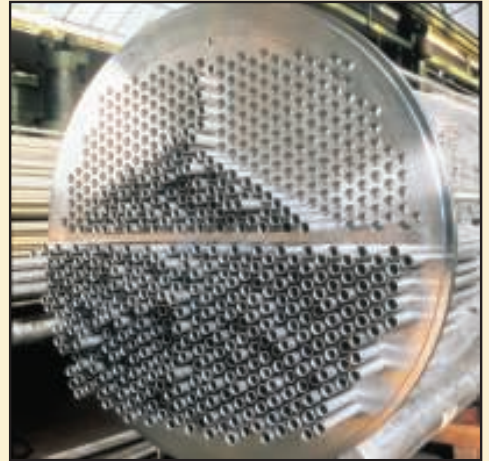
No matter where you go, Paharpur is on the job to help keep you more comfortable.....to keep plants running profitably..



Sandvik Materials Technology

Sandvik Materials Technology
SE-811 81 Sadviken
Sweden
Phone: +46 26 260000
Fax: +46 26 251710
Website: www.smt.sandvik.com

Sandvik Materials Technology is a world-leading developer and manufacturer of products in advanced stainless steels and special alloys for the most demanding environments, as well as products and systems for industrial heating. Our products and services contribute to our customers' productivity, reliability, and cost efficiency while often reducing the environmental impact in a wide variety of industry segments. In partnership with customers, we jointly develop products and materials that meet the challenges of the future.



TLV

TLV CORPORATION

13901 South Lakes Drive
 Charlotte, NC 28273
 Phone: 704.597.9070
 Fax: 704.583.1610
 www.tlv.com



Since its debut in 1950 with the first “**Trouble-Less Valve**”, TLV has continued to provide industry leading advancements in steam control technology. Today, TLV is a global company offering a broad range of high performance products which deliver extended service life and improved energy efficiency. Manufacturer TLV CO., LTD. Kakogawa, Japan, is approved to ISO 9001 and ISO 14001 standards.



TLV's PowerDyne® series

GREATER SIMPLICITY = HIGHER RELIABILITY

Buying TLV traps and related products means getting longer service life. Our design philosophy is to reduce the number of moving parts, thereby improving reliability. This principle is demonstrated in both our Free Float® and PowerDyne® traps.

TLV introduced the **Free Float®** concept to the steam industry over 45 years ago. Unlike other designs, there are no levers or linkages. The balanced float itself is the only moving part and can achieve a nearly perfect sphericity, creating an unmatched sealing performance. **PowerDyne®** disc traps include an air vent developed and patented by TLV to enable mirror-finish surfaces. The result is that both series provide exceptional energy efficiency.

TLV Free Float® and PowerDyne® traps are designed for severe service operation. Even at high pressures and temperatures, they provide excellent durability and resistance to water hammer and superheat, ensuring long and reliable operation.



STEAM SYSTEM MANAGEMENT

TLV offers technical assistance, on-site service, and training to help customers optimize the performance of their steam systems. We also offer diagnostic tools you can use to help ensure proper management of the steam trap population. Such system capabilities help maximize productivity, extend reliability, improve energy efficiency, and fulfill safety/environment requirements.

The TrapMan® Steam Trap Management System includes the TM5N portable data collection and measurement unit and Windows®-based TrapManager® software, which is loaded on a personal computer. The TM5N captures both ultrasound and contact temperature measurements from traps at the site. When uploaded to a PC, TrapManager® analyzes the data and makes an automatic judgment of the trap's condition, highlighting steam traps that require attention. TrapManager® provides detailed printed reports including trap logs, histories, and results analysis to effect optimal maintenance budget allocation.



SERVICES

TLV also offers Consulting & Engineering Services. CES engineers, who are certified AEE energy managers and DOE steam system specialists, can provide process recommendations and fully-piped packaged solutions for improving your new or existing steam system. CES services can provide a full steam and condensate balance to enable effective short and mid-term planning.

TLV believes that true customer satisfaction can only be obtained by finding solutions to the various challenges encountered while running businesses and operating steam plants. TLV Consulting & Engineering Services is designed to find the best solutions to increase productivity, maximize energy savings, improve quality and promote environmental conservation. CES activities are the embodiment of a complete customer satisfaction philosophy.

AIR-COOLED HEAT EXCHANGERS *by Paharpur*



At Paharpur's Kolkata-based air-cooled heat exchanger production facilities, heat transfer specialists, computer technology, and wide-ranging production, application and testing experience combine to produce the quality products of the Paharpur AirCooler line, which gives you:

- Over 20 years of experience with over 700 units in service.
- Thermal designs that conform to HTFS standards.
- Design pressures up to 160 bar.
- Complete header box range – plug, cover, manifold, D type.
- Complete finned tube range – L, G, extruded, welded.
- Comprehensive process control options – steam coil, louvres, warm air recirculation.
- Fans and drives designed specifically for air-cooled heat exchanger application.
- ASME U-stamp authorisation (if required).

When it comes to air-cooled heat exchangers for the chemical, petrochemical, oil refining, power, gas pipeline and other industries, it is Paharpur... or second best.



Paharpur Cooling Towers Ltd, Paharpur House, 8/1/B Diamond Harbour Road, Kolkata - 700 027, INDIA

Phone : +91-33-4013 3000 • Fax : +91-33-4013 3499 • pctccu@paharpur.com

PAHARPUR USA, Inc. Suite 135, 18300 East 71st Avenue Denver, CO 80249, USA • Phone : +1-303-989 7200

Fax : +1-720-962 8400 • info@paharpurusa.com



AIR-COOLED HEAT EXCHANGERS

COOLING TOWERS

AIR-COOLED STEAM CONDENSERS

Circle 29 on p. 190 or go to adlinks.chemengonline.com/56204-29

3M Technical Ceramics, 3M Technical Ceramics, Max-Schaidauf-Str. 25, Kempten, 87437 (e-mail: info.technical-ceramics@3m.com)

A

AAAmachine, Inc., 1291 Rand Road, Des Plaines, IL 60016 (18009960070 USA; 18478864535; 18474818264; FAX: 18473763530; e-mail: aaamachine@aaamachine.com; web site: www.aaamachine.com)

AAACE International, 209 Prairie Ave., Suite 100, Morgantown, WV 26501 (800-858-2678; 304-296-8444; FAX: 304-291-5728; e-mail: info@aaacei.org; web site: www.aaacei.org)

Aaron Process Equipment Co., 735 East Green Street, Bensenville, IL 60106-2549 (630-350-2200; FAX: 630-350-9047; e-mail: sales@aaronequipment.com; web site: www.aaronprocess.com)

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, 3530 Olive Ln N, Plymouth, MN 55447 (763-476-1013; e-mail: sales@sk-automation.com; web site: www.sk-automation.com)

ABEL GmbH & Co. KG, Abel Twiete 1, Buechen, D 4121514 (+49 4155 818-0; e-mail: mail@abel.de; web site: www.abelpumps.com)

ABI LTD., 8900 Keele Street, Unit 1, Concord, L4K 2N2 (800-297-8666 Canada & USA; 905-738-6070; FAX: 905-738-6085; e-mail: info@abilt.com; web site: www.abilt.com)

Abresist Kalenborn Corporation, 5541 North State Road 13, PO Box 38, Urbana, IN 46990 (800-348-0717; 260-774-3327; FAX: 260-774-3832; e-mail: info@abresist.com; web site: www.abresist.com)

ABS Materials, Inc., 1909 Old Mansfield Road, Ohio 44691 (e-mail: k.lyncb@absmaterials.com)

ABZ, INC., 4451 Brookfield Corp. Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com; web site: www.abzinc.com)

Accelerated Technology Laboratories, Inc., 496 Holly Grove School Rd., West End, NC 27376-8412 (800-565-5467 US & Canada; 910-673-8165; FAX: 910-673-8166; e-mail: info@atlabb.com; web site: www.atlab.com)

Accusonic Technologies, Inc., 28 Patterson Brook Road, Unit 1, West Wareham, MA 02576 (508-495-6600; FAX: 508-495-6699; e-mail: accusonicsales@dexcorp.com; web site: www.accusonic.com)

Acrison Inc., 20 Empire Blvd., Moonachie, NJ 07074 (800-4-acrison; 201-440-8300; FAX: 201-440-4939; e-mail: nform@acrison.com; web site: www.acrison.com)

Acromag, Inc., 30765 Wixom Rd., P.O. Box 437, Wixom, MI 48393-7037 (800-881-0268; 248-295-0880; FAX: 248-624-9234; e-mail: sales@acromag.com; web site: www.acromag.com)

Adaptive Research, 2051 Young St. #31, Honolulu, HI 96826 (FAX: 808-356-0128; e-mail: arsalses@adaptive-research.com; web site: www.adaptive-research.com)

Adaptive Resources, 104 Broadway Street, Carnegie, PA 15106 (412-431-4662; FAX: 412-431-4104; e-mail: support@adaptiveresource.com; web site: www.adaptive-resources.com)

ADI Systems Inc., PO Box 397, 7 Pointe Sewall Road, Wolfeboro, NH 03894 (800-561-2831 USA/Canada; 603.569.0955; FAX: 603.569.0957; e-mail: systems@adi.ca; web site: www.adisystemsinc.com)

ADI Systems Inc., 370 Wilsley Road, Fredericton, E3B 6E9 (1-800-561-2831 USA/Canada; 1-506-452-7307; FAX: 1-506-452-7308; e-mail: systems@adi.ca; web site: www.adisystemsinc.com)

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admixon.com; web site: www.admix.com)

Admix manufactures sanitary mixing systems and is recognized for innovation and high quality. Admix offers a diverse product line to meet any mixing challenge focused on adding powders into liquid.

International, Admix, Inc. - Europe, Hejrevang 21A, O 3450 Allerbyltd (+45 (3213) 8743)

Advance, 14600 21st Av N, Plymouth, MN 55447 (800-850-5559; 800-850-5559; FAX: 800-989-6566; e-mail: info@advance-us.com; web site: www.advance-us.com)

Advance Boiler & Tank Co., 6600 W. Washington St., Ste. 700, West Allis, WI 53214 (414-908-8373; FAX: 414-918-4170; e-mail: dandrea@advanceboiler.com; web site: www.advanceboiler.com)

Advanced Air Technologies, Inc., 300 Earl Sleseman Dr., Corunna, MI 48817 (800-295-6583; 989-743-5544; FAX: 989-743-5624; e-mail: mbiondi@advairtech.com; web site: www.advairtech.com)

Advanced Cyclone Systems, S. A., Edif. V=ccio Scala, Rua de Vilar, 235 C-1 Esq., Porto 4050-626 (+351 226 003 268; FAX: +351 225 322 096; e-mail: info@acsystems.pt; web site: www.acsystems.pt)

Advanced GeoSystems Corp., 1055 Andrew Drive, Suite A, West Chester, PA 19380-4293 (888-824-3992 National-wide; 610-840-9100; 610-840-9154; FAX: 610-840-9199; e-mail: agc@agcinfo.com; web site: www.agcinfo.com)

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., PO Box 1102, Baltimore, MD 21146 (410-421-9180; FAX: 410-421-5396; e-mail: info@AdvancedHeatRecovery.com; web site: www.AdvancedHeatRecovery.com)

Advanced Industrial Technology Corp., 640 Cambridge Rd., Paramus, NJ 07652 (201 483 7235; FAX: 201-; e-mail: jcw@advantetchnology.com; web site: www.advantetchnology.com)

A & D Weighing, 1756 Automation Pkwy, San Jose, CA 95131 (800-728-3364; 408-263-5333; FAX: 408-263-0119; e-mail: info@andmedical.com; web site: www.andweighing.com)

ADWEST TECHNOLOGIES, a CECO Environmental Company, 1175 North Van Horne Way, Anaheim, CA 92806-2506 (714) 632-9801; FAX: (714) 632-9812; web site: www.adwestusa.com)

AEGIS Bearing Protection Rings, 31 Winterbrook Road, Mechanic Falls, ME 04256 (866-738-1857; 207-998-5140; FAX: 207-998-5143; e-mail: sales@est-aegis.com; web site: www.est-aegis.com)

Aerzener Maschinenfabrik GmbH, Reheweg 28, D-31855, Aerzen, (+49 (0)5154 810; FAX: +49 (0)5154 81191; e-mail: info@aerzener.de; web site: www.aerzener.com)

Aflex Hose USA, LLC, Unit B, 6111 Keller's Church Road, Pipersville, PA 18947 (215 7661 455; FAX: 215 7661 688; e-mail: greg.evans@aflex-hose.com; web site: www.aflex-hose.com)

AIC, 135 Newbury St, Framingham, MA 01701 (800-238-0001; FAX: 508-270-1800; e-mail: info@aicma.com; web site: www.aicma.com)

Air/Compliance Consultants, Inc., 1050 William Pitt Way, Pittsburgh, PA 15238 (412-826-3636; FAX: 412-826-3640; e-mail: jmerrill@air-comp.com; web site: www.air-comp.com)

Airflow Sciences Corporation, 12190 Hubbard Street, Livonia, MI 48150-1737 (734) 525-0300; FAX: (734) 525-0303; e-mail: asc@airflowsciences.com; web site: www.airflowsciences.com)

AIRLANCO, 312 S. Highway 73, PO Box 398, Falls City, NE 68355-0398 (800-500-9777; 402-245-2325; FAX: 402-245-5196; e-mail: sales@airlanco.com; web site: www.airlanco.com)

Air Liquide Global E&C Solutions Germany GmbH, Olof-Palme-Str. 35, Frankfurt am Main 60439 (+49 69 5808-0; FAX: +49 (0) 69-5808-3888; e-mail: communication@lurgi.com; web site: www.engineering-solutions.airliquide.com)

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

AirPro Fan & Blower Company, PO Box 543, Wisconsin 54501 (e-mail: sales@airprofan.com)

AirSep Corp., Ai A Chart Industries Company, A Chart Industries Company, 260 Creekside Drive, Buffalo, New York 14228-2075 (800-320-0303 USA/Canada; 716-691-0202; FAX: 716-691-1255; e-mail: info@airsep.com; web site: www.airsep.com)

AKW Apparate & Verfahren GmbH, Dienhof 26, Hirschau, Bavaria D-92242 (+49 9622 7039 0; FAX: +49 9622 7039 376; e-mail: akwauv@akwauv.com; web site: www.akwauv.com)

ALAQUA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alaqua@mindspring.com; web site: www.alaquainc.com)

Alexanderwerk AG, Kippdorferstr. 6-24, Remscheid 42857 (49-21-91-795-0; FAX: 49-21-91-795350; e-mail: imaschinen@alexanderwerk.com; web site: www.alexanderwerk.com)

Alfa Laval Tank Equipment, 604 Jeffers Circle, Exton, Pennsylvania 19431 (877-426-2538; 610-408-9940; FAX: 610-408-9945; e-mail: sales@gamajet.com; web site: www.gamajet.com)

Allweiler GmbH, Allweilerstr. 1, Radolfzell 78315 (+49 7732 86-0; FAX: +49 7732 86-436; e-mail: service@allweiler.de; web site: www.allweiler.com)

Altech PCME, 2623 Kaneville Court, Illinois 60134 (e-mail: skostal@alechusa.com)

AMACS, 14211 Industry Street, Houston, TX 77053 (800-231-0077; 713-434-0934; FAX: 713-433-6201; e-mail: amacs@amacs.com; web site: www.amacs.com)

AMANDUS KAHLE GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-77110; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahle.de)

Ambient Engineering Inc., 5 Crescent Ave., P.O. Box 279, Rocky Hill, NJ 08553-0279 (609-279-6888; FAX: 609-279-9444; e-mail: george@ambienteng.com; web site: www.ambienteng.com)

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60
American Fabric Filter Co., P.O. Box 7560, Wesley Chapel, FL 33545-0110 (800-367-3591; 813-991-9400; FAX: 813-991-9700; e-mail: info@americanfabricfilter.com; web site: www.americanfabricfilter.com)

American Gas & Chemical Co Ltd, 220 Pegasus Ave, New Jersey 07647 (e-mail: contact@amgas.com)

American Pulverizer, 1319 Macklin Avenue, St. Louis, MO 63110 (314-781-6100; FAX: 314-781-9209; e-mail: sales@ampulverizer.com; web site: www.ampulverizer.com)

Ameridia, Div. of Eurodia Industries, 20 F Worlds Fair Dr., Somerset, NJ 08873 (732-805-4000; FAX: 732-805-4008; e-mail: main@ameridia.com; web site: www.ameridia.com)

Analytical Measurements, 22 Mountain View Drive, Chester, NJ 07930 (800-635-5580; 908-955-7170; FAX: 908-955-7170; e-mail: phmeter@verizon.net; web site: www.analyticalmeasurements.com)

Analytical Systems Intl / KECO R&D, 9215 Solon Road, Suite A4, Houston, TX 77064 (281-516-3500; FAX: 281-351-8925; e-mail: customerservice@asikeco.com; web site: www.Liquidgasanalyzers.com)

ANDRITZ Gouda, Coenenoord 88, Waddinxveen 2741 PD (+31.182.623.723; FAX: +31.182.619.217; e-mail: gouda@andritz.com; web site: www.andritzgouda.com)

ANDRITZ KMPT GmbH, Industriestrasse 1-3, Vierkirchen, 85256 (+49 (8139) 80 299 0; 513-315-5025; FAX: +49 8139 80 299 751; e-mail: info.kmpt@andritz.com; web site: www.andritz.com/de/se-vierkirchen)

Anguil Environmental Systems, Inc., 8855 N. 55th St., Milwaukee, WI 53223 (800-488-0230; 414-365-6400; FAX: 414-365-6410; e-mail: sales@anguil.com; web site: www.anguil.com)

Anton PAAR GmbH, Anton Paar Strasse 20, Graz, 8054 (43-316-257-0; FAX: 43-316-257-0; e-mail: info@anton-paar.com; web site: www.anton-paar.com)

Anton PAAR USA, 10215 Timber Ridge Dr, Ashland, VA 23005 (800-722-7556; 804-550-1051; FAX: 804-550-1057; e-mail: info.us@anton-paar.com; web site: www.anton-paar.com)

AOC

World Leader in Resin Technology

AOC RESINS, 955 Highway 57 East, Collierville, Tennessee 38017 (800-238-7536; 901-854-2800; FAX: 901-854-1183; e-mail: sales@oc-resin.com; web site: www.aoc-resins.com)

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)

Apple Rubber Products, 310 Erie St, Lancaster, NY 14086 (716-684-6560; FAX: 716-684-8302; e-mail: info@apple-rubber.com; web site: www.apple-rubber.com)

Applied Porous Technologies, Inc., 2 Tunxis Road, P.O. Box 569, Tariffville, CT 06081 (860-408-9793; FAX: 860-651-6749; e-mail: info@appliedporous.com; web site: www.appliedporous.com)

Applus RTD USA, 11801 S. Sam Houston Parkway W, Houston, TX 77031 (832 295 5000; FAX: 832 295 5001; e-mail: info.usa@applusrtid.com; web site: www.applusrtid.com)

ARCA Regler GmbH, Kempener Str. 18, Toenisvorst 47918 (49-2156-7709-0; FAX: 49-2156-770955; e-mail: sale@arca-valve.com; web site: www.arca-valve.com)

Arch City Steel, 310 Westminster Dr., Fenon, Missouri 63026 (636-343-3004; FAX: 636-343-8680; web site: www.archcitysteel.com)

Argonide Corporation, 291 Power Court, Sanford, FL 32771 (407-322-2500; e-mail: sales@argonide.com; web site: www.argonide.com)

Arkema Inc., 900 First Avenue, King of Prussia, Pennsylvania 19406 (800-225-7788; 610-205-7000; FAX: 610-205-7913; web site: www.arkema-americas.com)

Armstrong International, 816 Maple Street, Three Rivers, MI 49093 (269-273-1415; FAX: 269-279-6555; e-mail: marketing@armstronginternational.com; web site: www.armstronginternational.com)

ASDQMS, PO Box 23757, Chagrin Falls, OH 44023 (248-370-9919; FAX: 248-370-9921; e-mail: info@spcanywhere.com; web site: www.spcanywhere.com)

Ashcroft Inc., 250 East Main Street, Stratford, CT 06614-5145 (800/328-8258; FAX: 203-385-0408; e-mail: info@ashcroft.com; web site: www.ashcroft.com)

Assmann Corp of America, 300 N. Taylor Rd., Garrett, IN 46738 (888-357-3181; 260-357-3181; FAX: 260-357-3738; e-mail: info@assmann-usa.com; web site: www.assmann-usa.com)

Associated Bag Company, 400 W. Boden Street, Milwaukee, WI 53207 (800-926-6100; 414-769-1000; FAX: 414-769-6530; e-mail: customerservice@associatedbag.com; web site: www.associatedbag.com)

Atlas Material Testing Technology LLC, 1500 Bishop Court, Mount Prospect, IL 60056 (7737324520; FAX: 773-327-5787; e-mail: atlas.info@amatetek.com; web site: www.atlas-mts.com)

ATS RheoSystems, Cannon Instrument Company, 231 Crosswicks Road, Suite 8, Bordentown, NJ 08050-2405 (609-298-2522; FAX: 609-298-2795; e-mail: info@atsrheosystems.com; web site: www.atsrheosystems.com)

Auburn Systems, LLC, 8 Electronics Ave, Danvers, MA 01923 (800-255-5008; 978-777-2460; FAX: 978-777-8620; e-mail: sales@auburnsys.com; web site: www.auburnsys.com)

Auma Actuators Inc., 100 Southpointe Blvd, Cannonsburg, PA 15317 (724 744-4UMA (2862); FAX: 724 743-4711; e-mail: mailbox@auma-usa.com; web site: www.auma-usa.com)

AUMA RIESTER GMBH & CO. KG, Aumastrasse 1, P.O. Box 1362, Muelheim, 79379 (+49 7631 8090; FAX: +49 7631 809250; e-mail: riestera@auma.com; web site: www.auma.com)

Aumund Fordertechnik GmbH, Saalhofer Str. 17, Rheinberg 47495 (49-2843-72-0; FAX: 49-2843-60270; e-mail: info@aumund.de)

Automation Products Inc. (Dynatrol Div.), 3030 Maxroy St., Houston, TX 77008 (800-231-2062 USA & Canada; 713-869-0361; FAX: 713-869-7332; e-mail: sales@dynatrol-usa.com; web site: www.DynatrolUSA.com)

AVA-Americas, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-americas.com; web site: www.ava-huep.com)



AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Leading supplier of machines and system solutions with core competence in mixing and drying. Extensive process know-how, technically advanced high-quality equipment, comprehensive services and intensive consulting guarantee successful process solutions.

AVEVA, High Cross, Madingley, Cambridge, CB3 0HB (e-mail: kate.magill@aveva.com)

AVEVA Inc., 10370 Richmond Ave., Ste. 400, Houston, TX 77042 (713 977 1225; e-mail: sales.us@aveva.com; web site: www.aveva.com/chemical)

AW-Lake Company, Lake Monitors & AW Gear Meters, 8809 Industrial Drive, Franksville, WI 53126 (800-850-6110; 262-884-9800; FAX: 262-884-9810; e-mail: marketing@aw-lake.com; web site: www.aw-lake.com)

AWT World Trade Inc., 4321 N. Knox, Chicago, IL 60641 (773 777 7100; FAX: 773 777 0909; e-mail: sales@awt-gpi.com; web site: www.awt-gpi.com)

B

Badger Meter Europa GmbH, Nueringer Strasse 76, Neuffen 72639 (0049 (0)7025-9208-0; FAX: 0049 (0)7025-9208-15; e-mail: badger@badgermeter.de; web site: www.badgermeter.de)

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: info@central@badgermeter.com; web site: www.badgermeter.com)

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

BARTEC GmbH, Max-Eyth-Strasse 16, Bad Mergentheim D-97980 (+49 7931 597-0; FAX: +49 7931 597-119; e-mail: info@bartec.de; web site: www.bartec.de)

Bascale Company, Inc., P.O. Box 157, Houston, TX 77410-0157 (713-996-0303; FAX: 713-456-2352; e-mail: sales@bascale.com; web site: www.bascale.com)

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Bayer Technology Services GmbH, Leverkusen D-51368 (49-214-30-1; e-mail: info@bayerertechnology.com; web site: www.bayerertechnology.com)

Beames, Inc., 2152 Northwest Parkway, Suite A, Marietta, GA 30067 (800-888-9892; 770-951-1927; FAX: 770-951-1928; e-mail: beamesinc@beames.com; web site: www.beames.com)

Bedrock Automation, 275 Turnpike Street, Suite 101, Canton, Massachusetts 02021 (626-824-0404; e-mail: Robert.Bergman@bedrockautomation.com; web site: www.bedrockautomation.com)



BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)

Beltran Technologies has become the first name in advanced gas cleaning & air pollution emission control for a broad spectrum of industrial processes, metallurgical and sulphuric acid production.

Bematek Systems, Inc., 96 Swampscott Rd Unit 7, Salem, MA 01970 (877-BEMATEK (236-2835) US; 978-744-5816; FAX: 978-744-2531; e-mail: bematek@bematek.com; web site: www.bematek.com)

Bepex International LLC, 333 N.E. Taft St., Minneapolis, MN 55413-2810 (800-607-2470; 612-331-4370; FAX: 612-627-1444; e-mail: info@bepex.com; web site: www.bepex.com)

BERNDORF BAND GMBH, Leobersdorferstr. 26, Berndorf, 2560 (43-2672-800-0; FAX: 43-2672-84176; e-mail: band@berndorf.at; web site: www.berndorf-band.at)

IL, Berndorf Belt Technology Inc., 59 Prairie Parkway, Gilberts 60136 (1 800-393-8450)

beroplan GmbH Membran- und Prozesstechnik, Zur Schnappphahn Dell 8a, St. Ingbert 66386 (+49 6894 8950600; FAX: +49 6894 8950601; e-mail: info@beroplan.de; web site: www.beroplan.de)

Berthold Technologies GmbH & Co.KG, Calmbacher Str. 22, Bad Wildbad 75323 (+49 7081 177 0; FAX: +49 7081 177 100; e-mail: info@berthold.com; web site: www.berthold.com)

BEST, ORAN 31000 (e-mail: obenami1985@yahoo.fr)

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 2400; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)

BHS-Sonthofen GmbH, An der Eisenschmelze 47, Sonthofen, Deutschland 87527 (08321 6099-0; FAX: 08321 6099-220; e-mail: info@bhs-sonthofen.de; web site: www.bhs-sonthofen.de)

BHS-Sonthofen Inc., 14300 South Lakes Drive, Charlotte, NC 28273 (704-845-1190; FAX: 704-845-1902; e-mail: info@bhs-filtration.com; web site: www.bhs-filtration.com)

BIAR Sampling Systems, 2506 S. Philippe Avenue, Gonzales, LA 70737 (225-647-4300; FAX: 225-647-4309; e-mail: sales@biar.com; web site: www.biar.com)

Biazzì SA, 25 ch de la Tavallaz, P.O. Box 84, Chailly/Montreux 1816 (41-21-989-2121; FAX: 41-21-989-2120; e-mail: marketing@biazzi.com; web site: www.biazzi.com)

BIC Alliance, 381 Columbia Memorial Parkway, Kemah, TX 77565 ((800) 460-4242; (281) 538-9996; FAX: (281) 538-9991; web site: brooke@bicalliance.com)

Bioengineering AG, Sagenrainstrasse 7, Wald, 8636 (41-55-256-81-1; FAX: 41-55-256-82-56; e-mail: info@bioengineering.ch; web site: www.bioengineering.ch)

Bioengineering Inc., 35 Medford Street, Suite 213, Somerville, MA 02143 (001 617 996 1212; FAX: 001 617 996 1213; e-mail: info@bioengineering-inc.com; web site: www.bioengineering-inc.com/www.bioengineering.ch)



BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

Bionic Industries is the proven global leader in providing innovative cost effective systems for control of multipollutant air emissions, recovery of valuable product and waste heat in the chemical industry.

Biowater Technology, 2145 Diamond Hill Road, Suite 4B, Cumberland, Rhode Island 02864 (401-305-3622; FAX: 401-305-3677; e-mail: sales@biowatertechnology.com; web site: www.biowatertechnology.com)

BJM Pumps, LLC, 123 Spencer Plain Rd., PO Box 1138, Old Saybrook, CT 06475 (800-442-2562 877-BJM-PUMP; 860-399-5937; FAX: 860-399-7784; e-mail: sales@bjmpumps.com; web site: www.bjmpumps.com)

Blackhawk Technology Company, 21 W 111 Hill Avenue, Glen Ellyn, Illinois 60137 (630-469-4916; FAX: 630-469-4896; e-mail: mbertane@blackhawkco.com; web site: www.blackhawkco.com)

BLUEBEAM SOFTWARE, 55 S. Lake Ave, California 91101 (e-mail: jmcguinness@bluebeam.com)

Boerger GmbH, Benningsweg 24, Borken-Weseko 46325 (49-2862-91030; FAX: 49-2862-910346; e-mail: info@boerger.com; web site: www.boerger.com)

Boerger Pumps, 2860 Water Tower Place, Chanhassen, MN 55317 (877-726-3743; 612-435-7300; FAX: 612-435-7301; e-mail: america@boerger.com; web site: www.boerger.com)

Boerger Pumps Asia Pte. Ltd., 16 Moon Lake Way, #01-48 TradeHub21, Singapore 609965 (65-6562-9540; FAX: 65-6562-9542; e-mail: asia@boerger.com; web site: www.boerger.com)

BORSIG GmbH, Egellstrasse 21, Berlin 13507 (49 (0) 30 4301-01; FAX: 49 (0) 30 4301-2236; e-mail: info@borsig.de; web site: www.borsig.de)

B & P Process Equipment, 1000 Hess Ave., Saginaw, MI 48601 (989-757-1300; FAX: 989-757-1301; e-mail: sales@bprocess.com; web site: www.bprocess.com)

Brabender Technologie GmbH & Co. KG, Kulturstraße 55-73, Duisburg 47055 (+49 203 9984-0; FAX: +49 203 9984-155; e-mail: email@brabender-technologie.com; web site: www.brabender-technologie.com)

Branch Environmental Corp., P.O. Box 5265, 3461 Route 22 East, Somerville, NJ 08876-1303 (908-526-1114; FAX: 908-526-2881; e-mail: sales@branchenv.com; web site: www.branchenv.com)

Bronkhorst High-Tech BV, Nijverheidsstraat 1A, Ruurlo NL-7261AK (+31 573458800; FAX: +31 573458808; e-mail: info@bronkhorst.com; web site: www.bronkhorst.com)

Bronkhorst USA Inc., 57 S. Commerce Way, Suite 120, Bethlehem, Pennsylvania 18017 ((610) 866-6750; FAX: (610) 866-9212; e-mail: sales@bronkhorstusa.com; web site: www.bronkhorstusa.com)

Brookfield Engineering Laboratories, Inc., 11 Commerce Blvd., Middleboro, Massachusetts 02346 (800-628-8139 (Not MA); 508-946-6200; FAX: 508-946-6262; e-mail: info@brookfieldengineering.com; web site: www.brookfieldengineering.com)

Brooks Instruments, 407 W. Vine St., Hatfield, PA 19440 (888-554-FLOW; 215-362-3500; FAX: 215-362-3745; e-mail: info@brooksinstrument.com; web site: www.brooksinstrument.com)

Bryan Steam LLC, 783 North Chili Avenue, Peru, IN 46970 (765-473-6651; FAX: 765-473-3074; e-mail: inquiry@bryan-steam.com; web site: www.bryanboilers.com)

BS & B Safety Systems, Inc., 7455 E. 46th St., Tulsa, OK 74147 (1-800-BSS-DISK; 918-622-5950; FAX: 918-665-3904; e-mail: sales@tul.bsbsystems.com; web site: www.bsbsystems.com)

Buchi Pilot Plant & Reactor systems, Headquarters, Geschwaderstrasse 12, Uster, New York 8610 (+41449055111; FAX: +41449055122; e-mail: r.zimmermann@buchiglas.com; web site: www.buchiglas.com)

Buhler Inc., 13105 12th Ave N, Plymouth MN 55441, PO Box 9497, Minneapolis, MN 55440-9497 (763-847-9900; FAX: 763-847-9911; e-mail: buhler.minneapolis@buhler-group.com; web site: www.buhlergroup.com/us)

Burkert Fluid Control Systems, 2915 Whitehall Park Suite 650, Charlotte, NC 28273 (800-325-1405; 704-504-4440; FAX: 949-223-3198; e-mail: marketing-usa@burkert.com; web site: www.burkert-usa.com)

Burkert Fluid Control Systems, Christian-Buerkert-Str. 13-17, Ingelfingen, 74653 (+49 7940 10-0; FAX: +49 7940 10-91 204; e-mail: info@burkert.com; web site: www.burkert.com)

Buschjost GmbH, Detmolder Str. 256, Bad Oeynhausen 32545 (+49 5731 791-0; FAX: +49 5731 791-179; e-mail: mail@buschjost.de; web site: www.buschjost.com)

Busch LLC, 516 Viking Dr., Virginia Beach, VA 23452 (800-USA-PUMP; 757-463-7800; FAX: 757-463-7407; e-mail: marketing@buschusa.com; web site: www.buschusa.com)

BUSS ChemTech AG BUSS ChemTech AG, Hohenrainstrasse 12A, Pratteln 1 CH-4113 (+41 (0)61 825 64 62; FAX: +41 (0)61 825 67 37; e-mail: info@buss-ct.com; web site: www.buss-ct.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

Bustin Industrial Products, 401 Oak St., East Stroudsburg, PA 18301-1493 (800-933-5166; 570-424-6500; FAX: 570-424-6453; e-mail: slukas@bustin-usa.com; web site: www.bustin-usa.com)

Butterworth Inc., 16737 West Hardy Rd., Houston, TX 77060 (281.821.7300; FAX: 281.821.5550; e-mail: sales@butterworth.com; web site: www.butterworth.com)

BWB Technologies UK Ltd, Unit 8, The Galloway Centre, Hambridge Lane, Newbury RG14 5TL (800 608 9870; 441787273 451; FAX: 441787274 870; e-mail: sales@bwbtech.com; web site: www.bwbtech.com)

C

Cachat, M. F., Co., Headquarters, 14725 Detroit Ave., Suite 3000, Lakewood, OH 44107 (800-729-8900; 216-228-8900; FAX: 216-228-9141; e-mail: info@mfcachat.com; web site: www.mfcachat.com)

CAI Catalysts, 881 Sunnynetown Pike, Gwynedd Square, PA 19446-5303 (610-547-7399; e-mail: info@caicatalysts.com; web site: www.caicatalysts.com)



CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Caloris offers decades of engineering experience in evaporation and drying, including pre-engineered compact MVR evaporators, innovative solutions for new systems and troubleshooting with emphasis on energy savings and process improvements.

CAMO Software, P.O. Box 1662 Vika, Oslo, 0120 ((+47) 22 39 63 00; FAX: (+47) 22 36 93 22; e-mail: info@camo.com; web site: www.camo.com)

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

Cass Polymers, Inc., 311 NW 122 St, Oklahoma City, OK 73114 (405-755-8448; FAX: 405-755-8450; e-mail: casspolymers@casspolymers.com; web site: www.casspolymers.com)

Cat Pumps, 1681 94th Lane NE, Minneapolis, MN 55449 (763-780-5440; FAX: 763-780-2958; e-mail: info@cat-pumps.com; web site: www.catpumps.com)

CECO Filters, a CECO Environmental Company, 700 Emlen Way, Telford, Pennsylvania 18969 (800-220-8021; FAX: 610-825-3108; e-mail: sales@cecofilters.com; web site: www.cecofilters.com)

CEJN Industrial Corp., 212 Ambrogio Dr., Gunee, Illinois 60031 (847-263-7200; FAX: 847-263-7207; e-mail: customer.service@cejnusa.com; web site: www.cejn.us)

CellMark Deutschland GmbH, Chemicals, Hambrorner Strasse 53, Duesseldorf, 40472 (0049-211-5238-0; e-mail: chemicals-europe@cellmark.com; web site: www.cellmark.com/our-divisions/cellmark-chemicals/)

CG Thermal LLC, 8950 Dutton Drive, Twinsburg, Ohio 44087 ((330) 405-0844; FAX: (330) 487-0304; e-mail: gregb@cgthermal.com; web site: cgthermal.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

International, Ross Process Equipment Pvt. Ltd., Plot No. D- 233/3, Chakan Industrial Area, Phase II, Village- Bhamboli, Tal. Khed, Pune, 0 410 501 (+91 2135 628400/01/02/03; FAX: +91 9595090311)

International, Ross (Wuxi) Equipment Company Ltd., 20 Chunsun W.Rd., Xishan Industrial Park, Wuxi, 0 214101 (0510-88261225; FAX: 0510-88263400)

International, Ross Systems & Controls (SysCon), 34 Westgate Blvd, Savannah, Georgia 31405 (866-797-2660; 912-238-5800; FAX: 912-238-1905)

International, Ross Mixing Inc., 1249 SE Industrial Blvd., Port St. Lucie, Florida 34952 (772 337 0900; FAX: 772 337 0911)

International, Ross Engineering Inc., 32 Westgate Blvd, Savannah, Georgia 31405 (912 238 3300; FAX: 912 238 5983)

International, Ross Metal Fabricators Inc., 225 Marcus Blvd., Deer Park, New York 11729 (631 586 7000; FAX: 631 586 7006)

Chattanooga Boiler and Tank Co., 1011 E. Main St., P.O. Box 110, Chattanooga, TN 37401 (423-266-7118; FAX: 423-755-6708; e-mail: sales@cbtank.com; web site: www.cbtank.com)

Chematur Ecopanning OY, Pohjoisranta 11F, Pori, FIN-28100 (+358 2 6240 200; e-mail: info@ecoplaning.fi; web site: www.ecoplaning.fi)

CHEMetrics Inc., 4295 Catlett Road, Calverton, Virginia 20138 (800-356-3072; 540-788-9026; FAX: 540-788-4856; e-mail: marketing@chemetrics.com; web site: www.chemetrics.com)

Chemical Information Services, 9101 LBJ Fwy., Suite 310, Dallas, Texas 75243 ((214) 349-6200; FAX: (214) 349-6286; e-mail: sales@chemicalinfo.com; web site: www.chemicalinfo.com)

Chemir, A Division of Evans Analytical Group, 2672 Metro Blvd., Maryland Heights, MO 63043 (800-659-7659; 314-261-6620; FAX: 314-291-6630; e-mail: info.chemir@eag.com; web site: www.chemir.com)

Chemline Plastics Limited, 55 Guardsman Road L3T 6L2 (e-mail: snagy@chemline.com)

Chemstations Europe GmbH, Lindencorso Unter den Linden 21, Berlin 10117 (+49 (0)30 20 200 600; FAX: +49 (0)30 2092 4200; e-mail: info@chemstations.eu; web site: www.chemstations.eu/)

CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300, Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com; web site: www.chemstations.com)

International, Chemstations Europe GmbH, Lindencorso, Unter den Linden 21, 10117, Berlin (49 30 20 200 600)

Chicago Blower Corp., 1675 Glen Ellyn Rd., Glendale Heights, IL 60139 (630-858-2600; FAX: 630-858-7172; e-mail: fans@chicagoblower.com; web site: www.chicagoblower.com)

Chilworth Technology, Inc., 113 Campus Drive, N/A, Princeton, NJ 08540 (609-799-4449; 609-799-4449; FAX: 609-799-5559; e-mail: safety-usa@chilworthglobal.com; web site: www.chilworth.com)

Christy Catalytics LLC, 4641 McRee Ave., St. Louis, MO 63110 (314-773-7500; FAX: 314-773-8371; e-mail: jachwirul@christyco.com; web site: www.christycatalytics.com)

Clean Air Engineering, 500 W. Wood St., Palatine, IL 60067 (800-627-0033; 847-991-3300; FAX: 847-991-3385; e-mail: contact@cleanair.com; web site: www.cleanair.com)

Clean Air Express Equipment, 500 W. Wood St., Palatine, IL 60067 (800-223-3977; 847-991-3611; FAX: 847-991-6577; e-mail: contact@cleanair.com; web site: www.cleanair.com)

Clean Air Instrument Rental, 500 W. Wood St., Palatine, IL 60067 (800-553-5511; 847-991-3300; FAX: 847-934-8260; e-mail: contact@cleanair.com; web site: www.cleanair.com)

Clean Harbors, 42 Longwater Drive, Norwell, MA 02061 (800-282-0058; 781-792-5000; FAX: 781-792-5938; e-mail: customerservice@cleanhARBORS.com; web site: www.cleanhARBORS.com)

Clearfield Machine Co., P.O. Box 992A, 520 South 3rd St., Clearfield, PA 16830 (814-765-6544; FAX: 814-765-4581; e-mail: info@clearfieldmachine.com; web site: www.clearfieldmachine.com)

Coastal Technologies Inc., P.O. Box 624, Hampton, South Carolina 29924 (803-943-4822; FAX: 803-943-4744; e-mail: sales@ctci-sc.com; web site: www.coastaltechologiesinc.com)

Cober, Inc., 30 Moffitt Street, Stratford, CT 06615 (203-855-8755 x332; FAX: 203-855-7511; e-mail: sales@cober.com; web site: www.wesber.com)

Cobey, 1 Ship Canal Parkway, Buffalo, New York 14218 (716-362-9550; e-mail: quotes@cobey.com; web site: www.cobey.com)

Cole Chemical, 1500 S. Dairy Ashford Rd, Suite 450, Houston, Texas 77077 (800-444-2171; 713-465-2653; FAX: 713-461-3462; e-mail: colechem@colechem.com; web site: www.colechem.com)

Cole-Parmer, 625 E. Bunker Ct., Vernon Hills, IL 60061 (800-323-4340; FAX: 847-247-2983; e-mail: info@coleparmer.com; web site: www.coleparmer.com)

Collins Instrument Co Inc., P.O. Box 938, Angleton, TX 77516 (979-849-8266; FAX: 979-848-0783; e-mail: ctc@collinsinst.com; web site: www.collinsinst.com)



COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Compressor Products International, 4410 Greenbriar Drive, Stafford, TX 77747 ((281) 207-4619; FAX: (281) 207-4612; e-mail: info@c-p-i.com; web site: www.c-p-i.com)

Compur Monitors GmbH & Co. KG, Weisenseestr. 101, Munich 81539 (49-89-620-38268; 49-89-620-380; FAX: 49-89-620-38184; e-mail: compur@compur.de; web site: www.compur.com)

Conbraco Industries, Inc., P.O. Box 247, Matthews, NC 28106 (704-847-6000; FAX: 704-841-6020; e-mail: www.apollovalves.com; web site: customerservice@conbraco.com)

Conn and Co., L.L.C., 11 S. Marion St., Warren, PA 16365 (814-723-7980; FAX: 814-723-8502; e-mail: rcreeferman@connblade.com; web site: www.connblade.com)

Control Instruments Corp., 25 Law Dr., Fairfield, NJ 07004-3295 (973-575-9114; FAX: 973-575-0013; e-mail: sales@controlinstruments.com; web site: www.controlinstruments.com)



CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Founded in 1967, Conval designs and manufactures U.S.-made, high-performance forged valves for the world's most demanding applications. Key industries served include petro-chemical, oil and gas, pulp and paper, and power.

Conversion Technology, Inc., 2190 N. Norcross Tucker Rd., Ste. 202, Norcross, GA 30071 (770-263-6330; FAX: 770-263-8348; e-mail: ct@conversiontechnology.com; web site: www.conversiontechnology.com/)

Conveyor Components Co., Material Control, Inc., 130 Seltzer Rd., PO Box 167, Crosswell, MI 48422 (800-233-3233; 810-679-4211; FAX: 810-679-4510; e-mail: info@conveyorcomponents.com; web site: www.conveyor-components.com)

Coperion GmbH, Niederbieger Str. 9, Weingarten, Wuert., 88250 (49 751 408-0; FAX: 49 751 408-200; e-mail: info.c-c-mh@coperion.com; web site: www.coperion.com) Corrosion Materials, 2262 Groom Rd., Baker, LA 70714 (800-535-8032; 225-775-3675; FAX: 225-774-0514; e-mail: sales@corrosionmaterials.com; web site: www.corrosionmaterials.com)



Cortec Corp., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@corctecvci.com; web site: www.corctecvci.com)

CORZAN INDUSTRIAL SYSTEMS, 9911 Brecksville Road, Cleveland, Ohio 44141 (888-234-2436; 216-447-7397; FAX: 216-447-6211; e-mail: Corzan@lubrizol.com; web site: www.corzancpv.com)

See our ad on page 97

Covestro LLC, 1 Covestro Circle, Pittsburgh, Pennsylvania 15205 (844-646-0545; 412-413-2000; web site: www.covestro.com)

CPC (Colder Products Company), 1001 Westgate Drive, St. Paul, Minnesota 55114 (800-444-2474; 651-645-0091; FAX: 651-645-5404; e-mail: info@pcworldwide.com; web site: www.pcworldwide.com)

CPFD-Software, 10899 Montgomery NE Suite B, Albuquerque, New Mexico 87111 (e-mail: sales@cpfd-software.com; web site: www.cpfd-software.com)

CPI Wirecloth & Screens Inc., P.O. Box 1710, Pearlard, TX 77588 (800-255-6374; 281-485-2300; FAX: 281-485-8837; e-mail: Sales@cpewirecloth.com; web site: Www.cpiwirecloth.com)

CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.crcleanair.com)

For over 50 years, CR CleanAir's engineered systems have been designed to address nearly any emissions challenge. From arsenic to zirconium tetrachloride, we scrub gasses others won't touch.

International, Madrid (+34 627 87 52 91)

International, Sakti Suria (M) Sdn Bhd (+ 60 380 61 08 68)

International, Intech Analytics, Optikov Street, 4/2 Letter A, Office 209, Saint-Petersburg 197374 (+7(812)493-24-80)

International, Shanghai Einar Vacuum Equipment Co., Ltd., No.2000, East Weiqing Road, Jinshanweizui Industrial Park., Jinshan District, Shanghai (+86-21-57242030; FAX: +86-21-57245545)

NJ, Six Campus Drive, Parsippany 07054 (9082324200; FAX: 908 232 2146)

International, Ankara Turkey (+90 532 645 4711)

International, ASEAN Region (+66 (0) 908071596; +86 13916604768)

International, Latin America & The Caribbean (+57 (311) 485 2681)

Creative Pultrusions, Inc., 214 Industrial Lane, Alum Bank, PA 15521 (888-CPI-PULL (274-7855); 814-839-4186; FAX: 814-839-4276; e-mail: crpul@pultrude.com; web site: www.creativepultrusions.com)

Cristal, 20 Wight Avenue, Suite 100, Hunt Valley, Maryland 21030 (800.638.3234; 410.229.4400; FAX: 410.229.4415; web site: www.cristal.com)

CRULL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

Croll Reynolds is an engineering firm specializing in the research, design, and manufacture of process vacuum systems. Specifically, we design Ejector Systems, Combination Liquid Ring/Ejector Systems, Thermocompressors, and Vacuum Chillers.

International, Intech Analytics, Optikov Street, 4/2 Letter A, Office 209, Saint-Petersburg 197374 (+7(812)493-24-80)

International, Shanghai Einar Vacuum Equipment Co., Ltd., No.2000, East Weiqing Road, Jinshanweizui Industrial Park., Jinshan District, Shanghai (+86-21-57242030; FAX: +86-21-57245545)

International, Croll Reynolds España/EA/IC/ra, Madrid (+34 627 87 52 91)

International, ASEAN Region (+66 (0) 908071596; +86 13916604768)

International, Ankara Turkey (+90 532 645 4711)

International, Croll Reynolds Malaysia, Salangor Darul Ehsan, Sakti Suria (M) Sdn Bhd (+ 60 380 61 08 68)

International, Latin America & The Caribbean (+57 (311) 485 2681)

International, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908 232 2146)

CTI Industries Inc., 2412 Torreyen Place, Carlsbad, CA 92009 (1-800-446-0060; 760-632-9117; FAX: 760-632-7691; e-mail: tqiun@cti-nd.com; web site: www.cti-nd.com)

CTP Corp., 271 Main St., Northport, NY 11768 (631-912-0800; 6318374086; FAX: 631-912-0899; e-mail: info@ctp-online.com; web site: www.ctp-online.com)
 CU SERVICES LLC, 725 Parvieu Circle, Elk Grove, IL 60007 (847-439-2303; FAX: 847-895-1602; e-mail: rronell@cuservices.net; web site: www.cuservices.net)
 CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)

D

Dakota Software Corp., 23240 Chagrin Blvd, Suite 620, Cleveland, OH 44122 (216-765-7100; 585-244-3300; FAX: 585-244-3301; e-mail: dakotamarketing@dakotasoft.com; web site: www.dakotasoft.com)
 Dalton Electric Heating Co., Inc., 28 Hayward St., Ipswich, MA 01938 (978-356-9844; FAX: 978-356-9846; e-mail: sales@daltonelectric.com; web site: www.daltonelectric.com)
 DATA-LINC GROUP, 1125 12th Ave NW, Washington 98027 (e-mail: marcom@data-linc.com)
 DataLyzr International, Inc., 29445 Beck Rd., Michigan 48393 (e-mail: klangran@datalyzer.com)
 Davis-Standard, LLC, 1 Extrusion Drive, Pawcatuck, CT 06379 (860-599-1010; FAX: 860-599-6258; e-mail: info@davis-standard.com; web site: www.davis-standard.com)
 DBI Services, 100 North Corahan Drive, Hazleton, Pennsylvania 18201 (877-689-3247; (570) 459-1112; web site: www.dbiservices.com)
 Dec Group - Dietrich Engineering Consultants sa, Z.I. Larges Pieces A - Chemin du Devent, Eculens 1024-CH (+41-21-694 20 40; FAX: +41-21-694 20 59; e-mail: info@dec-group.ch; web site: www.dec-group.net)
 DECHEMA e.V., P.O. Box 150104, Frankfurt am Main 60061 (49-69-25-64-0; FAX: 49-69-75-64-201; web site: www.dechema.de)
 Deder Corporation, 17740 Hoffman Way, Homewood, Illinois 60430 (708-747-7000; e-mail: info@deder.com; web site: www.deder.com)

De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)
 Delphin Corp., 220 Pegasus Ave., Northvale, NJ 07647 (800-288-3647; 201-767-7300; FAX: 201-767-1741; e-mail: contact@delphin.com; web site: www.delphin.com)
 Delta Cooling Towers Inc., 185 US Highway 206, Roxbury Township, NJ 07836 (973-586-2201; FAX: 973-586-2243; e-mail: info@deltacooling.com; web site: www.deltacooling.com)

Delta M Corp., 1003 Larsen Dr., Oak Ridge, TN 37830 (800-922-0083; 865-483-1569; FAX: 865-483-1142; web site: www.deltamcorp.com)
 Dematic Corp., 507 Plymouth Ave. N.E., Grand Rapids, MI 49505 (877-725-7500; 616-913-7700; FAX: 616-913-7701; e-mail: USinfo@dematic.com; web site: www.dematic.us)

Denver Mineral Engineers, Inc., 10641 Flatiron Rd, Littleton, CO 80124 (303-932-6280; e-mail: sales@denver-mineral.com; web site: www.denvermineral.com)

Diamond Refractory Services, 8412 Mosley Rd., Texas 77075 (e-mail: evanfeil@diamondrefractory.com)
 Dickow Pump Co., 1738 Sands Pl., S.E., #200, Marietta, GA 30067 (770-952-7903; FAX: 770-933-8846; e-mail: info@dickow.com; web site: www.dickow.com)

Digital Applications International, Axtell House, 24 Warwick St., London W1B 5NQ (44-20 7292 7500; FAX: 44-207-439-2077; e-mail: john.millard@dai.co.uk; web site: www.dai.co.uk)



DIPESH Engineering Works
 A member of J.I. Patel Group of Companies

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Diversified Toll Services, 50 Willowbrook Drive, Cheshire, Connecticut 06410 (203 915-0279; e-mail: djdcenzo@diversifiedtollservices.com; web site: www.diversifiedtollservices.com)

DMN Incorporated, 220 S. Woods St., Arkansas 72301 (e-mail: acreel@dmn-inc.com)

Dockweiler AG, An der Autobahn 10/20, Neustadt-Glewe 19306 (0049 38757 58 0; FAX: 0049 38757 58 4169; e-mail: sales@dockweiler.com; web site: www.dockweiler.com)

Donadon SDD Srl, Via Franceschelli, 7, Corbetta, 20011 (+390290111001; +390290112210; e-mail: donadonsdd@donadonsdd.com; web site: www.donadonsdd.com)

Dresser-Rand, Corporate Headquarters, West8 Tower, Suite 1000, 10205 Westheimer Road, Houston, TX 77042 (713-354-6100; FAX: 713-354-6110; e-mail: info@dresser-rand.com; web site: www.dresser-rand.com)

Dr. Thiedig GmbH & Co KG, Prinzanallee 78 - 79, Berlin 13557 (030-497769-0; FAX: 030-497769-25; e-mail: info@thiedig.com; web site: www.thiedig.com)

Dudick Inc., 1818 Miller Pkwy., Streetsboro, OH 44241 (800-322-1970; 330-562-1970; FAX: 330-562-7638; e-mail: tmoore@dudick.com; web site: www.dudick.com)

Dueker GmbH & Co. KGaA, Hauptstrasse 39-41, Laufach 63846 (49-6093-87-244; FAX: 49-6093-87-303; e-mail: juergen.thieler@dueker.de; web site: www.dueker.de)

Duke's Root Control, Inc., 1020 Hiawatha Blvd., West, New York 13204 (e-mail: lynnd@dukes.com)

Durag Inc., Environmental Hardware, 1355 Mendota Heights Rd., Suite 200, Mendota Heights, Minnesota 55120 (800-811-9852; 6514511710; 6514511710; e-mail: lori@durag.com)

Durr Systems, Inc., Clean Technology Systems, 40600 Plymouth Road, Plymouth, MI 48170 (1(866)DURR1ST; (734) 459-6800; FAX: (734) 459-5837; e-mail: CTS-sales@durrusa.com; web site: www.durr-cleantechnology.com)

Dymax Corp., 318 Industrial Lane, Torrington, CT 06790 (877-396-2988; 860-482-1010; FAX: 860-496-0608; e-mail: info@dymax.com; web site: www.dymax.com)

Dynamic Air Inc., 1125 Willow Lake Blvd., St. Paul, MN 55110-5193 (651-484-2900; FAX: 651-484-7015; e-mail: info@dynamicair.com; web site: www.dynamicair.com)

E

Eastman Chemical Co. Inc., P.O. Box 431, Kingsport, Tennessee 37662 (800-327-8626; 423-229-2000; FAX: 423-229-1196; web site: www.eastman.com)

EASTMAN CHEMICAL COMPANY - THERMINOL HEAT TRANSFER FLUIDS, 575 Maryville Centre Drive, Saint Louis, Missouri 63141 (800-433-6997; e-mail: team.therminol@eastman.com; web site: www.therminol.com)

EDWARDS US HEADQUARTERS, 6416 Indecon Drive West, Sanborn, NY 14132 (1 800 848 9800; FAX: 1 866 484 5218; e-mail: info@edwardsvacuum.com; web site: www.edwardsvacuum.com)

Ehcolo A/S, Smedevej 10, Foevling DK-6683 (45-75-398411; FAX: 45-75-398192; e-mail: post@ehcolo.dk; web site: www.ehcolo.dk)

Ehcolo A/S, Smedevej 10, Foevling DK-6683 (45-75-398411; FAX: 45-75-398192; e-mail: post@ehcolo.dk; web site: www.ehcolo.dk)

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schoepfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

ELAFLEX - Gummi Ehlers GmbH, Schnackenburgalle 121, Hamburg, 22525 (49-40-540005-0; FAX: 49-40-540005-67; e-mail: info@elaflex.de; web site: www.elaflex.de/en)

Eldridge Products Inc., 4675 Reservation Road, Marina, CA 93933 (831-648-7777; FAX: 831 648-7780; e-mail: sales@epiflow.com; web site: www.epiflow.com)

Electronic Development Labs, 244 Oakland Dr., Danville, VA 24540 (1.800.342.5335; 434-799-0807; FAX: 434-799-0847; e-mail: sales@edl-inc.com; web site: www.edl-inc.com)

Electroswitch, 180 King Ave., Weymouth, MA 02188 (800-366-2459; 781-335-5200; FAX: 781-335-4253; e-mail: info@electroswitch.com; web site: www.electroswitch.com)

Elliott Group, 902 North Fourth Street, Tulsa, Jeannette, PA 15644-1473 (724-600-8942; FAX: 724-527-2811; web site: www.elliott-turbo.com)

Elmridge Inc., 39111 West Six Mile Road, Livonia, Michigan 48152-3926 (888-338-2867; 416-749-7730; FAX: 416-749-2550; e-mail: sales@elmridgejetapparatus.com; web site: www.elmridgejetapparatus.com)

Elos Fikturlaser AB, Box 7, Molndal 431 21 (+46 31 706 28 00; FAX: +46 31 706 28 50; e-mail: sales@fikturlaser.se; web site: www.fikturlaser.com)

Elway Industries, Inc., 8339 Kempwood Drive, Houston, Texas 77055 (877-793-2800; (713) 690-9900; FAX: (713) 690-2022; e-mail: info@elwayinc.com; web site: www.elwayinc.com)

Emergency Film Group, 140 Cooke St., P.O. Box 1928, Edgartown, MA 02539 (800-842-0999 800-842-0999; 508-627-8844; FAX: 508-627-8863; e-mail: info@efilmgroup.com; web site: www.efilmgroup.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Encon Evaporators, 1368 Hooksett Road, Unit 9, Hooksett, NH 03106 (603-624-5110; FAX: 603-627-9520; e-mail: sales@evaporator.com; web site: www.evaporator.com)

Enerquip, LLC, 611 North Road, Medford, WI 54451 (715.748.5888; FAX: 715.748.6484; e-mail: sales@enerquip.com; web site: www.enerquip.com)

Enerquip, LLC, 611 North Road, Medford, WI 54451 (715.748.5888; FAX: 715.748.6484; e-mail: sales@enerquip.com; web site: www.enerquip.com)

Engineering Software, P.O. Box 1180, Germantown, MD 20875 (301-540-3605; FAX: 301-540-3605; e-mail: info@engineering-4e.com; web site: www.engineering-4e.com)

ENMET, 680 Fairfield Ct., Ann Arbor, Michigan 48108 (800-521-2978; 734-761-1270; FAX: 734-761-3220; e-mail: info@enmet.com; web site: www.enmet.com)

Entex Technologies Inc, 400 Silver Cedar Ct, Suite 200, Chapel Hill, NC 27514 (919-933-2770; FAX: 919-287-2258; e-mail: dick.pehrson@entexinc.com; web site: www.entexinc.com)

Environmental C&C, 21 Dunham Place, St. Charles, Illinois 60174-5795 (630-443-0751; e-mail: JMBOffice@SBC-Global.net; web site: www.EnvironmentalCC.com)

Environmental Compliance Products, Inc., #907 Warner Ave., Suite 122, Huntington Beach, CA 92647 (800-643-7065; 714-847-4474; FAX: 714-847-7554; e-mail: sales@hazmat77.com; web site: www.epcenvironmental.com)

Epcon Industrial Systems, L.P., P.O. Box 7060, The Woodlands, TX 77387 (800-447-7872; 936-273-3300; FAX: 936-273-4600; e-mail: epcon@epconlp.com; web site: www.epconlp.com)

Epoxies, Etc., 21 Starline Way, Rhode Island 02921 (e-mail: ebellenoit@epoxies.com)

Equilbar Precision Pressure Control, 320 Rutledge Road, North Carolina 28732 (e-mail: jeffjennings@equilbar.com)

EquipNet, Inc., 5 Dan Road, Canton, MA 02021 (888-371-6555; 781-821-3482; FAX: 781-849-7668; e-mail: sales@equipnet.com; web site: www.EquipNet.com)

Escitec, 6040 E Main St, Mesa, AZ 85205 (4808232685; e-mail: sales@escitec.com; web site: www.escitec.com)

E-Vac Technologies, LLC, 455 Valleybrook Rd., Mc-Murray, PA 15317 (8773822382; 8773822382; FAX: 8665512352; e-mail: SALES@EVACTECHNOLOGIES.COM; web site: www.evactechologies.com)

Evaporator Dryer Technologies, 1805 Ridgeway Street, Hammond, Wisconsin 54015 (715-796-2313; FAX: 715-796-2378; e-mail: info@evapdryertech.com; web site: www.evapdryertech.com)

EVEREST INTERSCIENCE, 733 North 9th Street, Oregon 97420 (e-mail: info@everestinterscience.com)

Evoqua, 4800 North Point Parkway, Suite 250, Alpharetta, Georgia 30022 (866.926.8420 USA; 978.614.7111; FAX: 978-970-2465; e-mail: information.water@evoqua.com; web site: www.evoqua.com/water)

EXAKT Technologies, Inc., 7416 N. Blvd. way Ext., Suite E, Oklahoma City, OK 73116-9066 (800-866-7172; 405-848-5800; FAX: 405-848-7701; e-mail: info@exaktusa.com; web site: www.exaktusa.com)

F

FABRICATED PLASTICS LIMITED, 2175 TESTON ROAD, MAPLE LGA 1T3 (905-832-8161; FAX: 905-832-2111; e-mail: info@fabricatedplastics.com; web site: www.fabricatedplastics.com)

Faudi GmbH, Faudi Strasse 1, Stadtallendorf 35260 (+49 6428 702-0; FAX: +49 6428 702-260; e-mail: Info@faudi.de; web site: www.faudi.de)



FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI_Marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

FEECO International, Inc., 3913 Algoma Rd., Green Bay, WI 54311 (800-373-9347; 920-468-1000; FAX: 920-469-5110; e-mail: sales@feeco.com; web site: www.feeco.com)

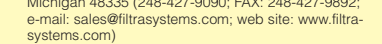
FELUWA Pumpen GmbH, Beulertweg 10, Muerlenbach 54570 (49-6594-10-0; FAX: 49-6594-10-200; e-mail: info@feluwa.de; web site: www.feluwa.com)

Ferrum Inc., Centrifuge Technology, 16225 Park Ten Place, Suite 500, Houston, TX 77084 (877 933 3778; FAX: 877 711 2329; e-mail: j.wirth@ferrum.com; web site: www.ferrum.com)

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Filtera-Systems Co., 23900 Haggerty Rd., Farmington Hills, Michigan 48335 (248-427-9090; FAX: 248-427-9892; e-mail: sales@filterasystems.com; web site: www.filtera-systems.com)

Filteration & Membrane Technology, Inc., 8342 Silvan Wind, Houston, TX 77040 (713-870-1120; FAX: 713-422-2533; e-mail: fmt-houston@att.net; web site: www.fmt-houston.com)



FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

FISHER-KLOSTERMAN ENTROL, A CECO ENVIRONMENTAL COMPANY, P.O. Box 11190, Louisville, Kentucky 40251-0190 (888-350-2939; 502-572-4000; FAX: 502-572-4025; e-mail: fki@cecoenviro.com; web site: www.fkinc.com)
Fisher Tank Co., 3131 W. Fourth St., Chester, PA 19013 (610-494-7200; FAX: 610-485-0157; e-mail: sales@fishertank.com; web site: www.fishertank.com)

FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-0060 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)

See our ad on page 3

International, Flexicon Corporation (Australia) Pty Ltd (Brisbane), 78 Westgate St., Wacol, QLD 4076 (61 (0) 7 3879 4180; FAX: 61 (0) 7 3879 4183)

International, Flexicon Africa (Pty) Ltd, PO BOX 10450, Linton Grange, Port Elizabeth 6015 (27 (0) 41 453 1871; FAX: 27 (0) 41 453 1670)

International, Flexicon Corporation (Australia) Pty Ltd (Sydney), PO BOX 111, Hornsby, NSW 2077 (61 (0) 2 9482 4033; FAX: 61 (0) 9482 4066)

International, Flexicon Singapore Pte Ltd, 27 West Coast Highway, #02-22 117867 (+65 6770 9225)

International, Flexicon Chile Ltd, Avenida Andres Bello #1051, Oficina #1602, Providencia, Santiago (56-2-415-1286; FAX: 56-2-415-1393)

International, Flexicon (Europe) Ltd (Spain), Sicilia 253, 4-1 1-™, Barcelona, 0 80825 (+34 647 670 302)

International, Flexicon (Europe) Ltd (UK), 182 John Wilson Business Park, Harvey Drive, Whitstable, Kent, O CT5 3RB (44 (0) 1227 374710; FAX: 44 (0) 1227 365821)

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

See our ad on page 127

International, FLEXIM France SARL, 13 rue du Parc - Oberhausbergen, Strasbourg Cedex 67088 (+33 388 27 78 02; FAX: +22 388 27 78 45)

International, FLEXIM GmbH (Austria), Greiner 376, Olbenorf 7534 (+43 3326 529 81; FAX: +43 3326 529 81 14)

International, FLEXIM Instruments Asia Pte Ltd, Singapore (+65 65 62 86 10; FAX: +65 65 62 86 11)

International, FLEXIM Instruments Benelux B.V., Berklese Poort 127, JX Berkel en Rodenrisj 2651 (+31 10 24 92 333; FAX: +31 10 24 92 339)

International, FLEXIM Instruments Asia Pte Ltd, Shanghai (+86 (21) 649 575 20)

NY, FLEXIM AMERICAS Corporation, 250-V Executive Drive, Edgewood, New York 11717 (631) 492-2300; FAX: (631) 492-2117)

Flex-Kleen, a CECO Environmental Company, 45 North Brandon Dr., Glendale Heights, Illinois 60139 (888-508-2808; FAX: 630-295-9019; e-mail: info@flex-kleen.com; web site: www.flex-kleen.com)

Floidyne Controls Inc., 48 Commerce Dr., Murray Hill, NJ 07974 (908-464-6200; FAX: 908-464-1553; e-mail: sales@floidynecontrols.com; web site: www.floidynecontrols.com)

Floflow SE, Industriestr. 6 - 8, Vilsbiburg 84137 (49-8741-301-0; FAX: 49-8741-301-300; e-mail: mail@floflow.com; web site: www.floflow.com)

Floflow Oy, P.O. Box 338 / Marsitie 1, Lappeenranta FI-53101 (358-201-113311; FAX: 358-201-113300; e-mail: info@floflow.com; web site: www.floflow.com)

Floserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.floserve.com)

Floserve Corp., 1900 S. Saunders St., Raleigh, North Carolina 27601 (919-831-3200; web site: www.floserve.com)

Floserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.floserve.com)

FLSmith, Mineral Processing, 7158 S. FLSmith Drive, Midvale, UT 84047 (801-871-7000; FAX: 801-871-7001; e-mail: info.slc@flsmith.com; web site: www.flsmith.com)

Fluid Imaging Technologies, Inc., 200 Enterprise Drive, Scarborough, ME 04074 (207-289-3200; FAX: 207-289-3101; e-mail: info@fluidimaging.com; web site: www.fluidimaging.com)

Fluid Line Products Inc., 38273 Western Pkwy., P.O. Box 1000, Willoughby, Ohio 44096 (440-946-9470; FAX: 440-946-9472; e-mail: fip@fluidline.com; web site: www.fluidline.com)

Fluid Metering, Inc., 5 Aerial Way, Suite 500, Syosset, New York 11791 (800-223-3388; 516-922-6050; FAX: 516-624-8261; e-mail: pumps@fmpump.com; web site: www.fmpump.com)

Fluid Sealing Association, 994 Old Eagle School Rd., Suite 1019, Wayne, PA 19087-1866 (610-971-4850; FAX: 610-971-4859; e-mail: info@fluidsealing.com; web site: www.fluidsealing.com)

Fluitron, Inc., 30 Industrial Dr., Ilyndale, PA 18974 (215-355-9970; FAX: 215-355-9074; e-mail: info@fluitron.com; web site: www.fluitron.com)

FLUX-GERAETE GMBH, Talweg 12, Mombach 75433 (+49 7043 101-0; e-mail: info@flux-pumpen.de; web site: www.flux-pumpen.de)

Forge Tech Inc., 900 Anders Bldg 15, Kemah, Texas 77565 (888-854-8414; (817) 966-8823; FAX: 832-864-2235; e-mail: jharper@fortechinc.com; web site: www.fortechinc.com)

FOSS NIRSystems, Inc., 7703 Montpelier Road, Laurel, MD 20723 (1-800-343-2036; +1-301-680-9600; FAX: +1-301-236-0134; e-mail: info@foss-nirsystems.com; web site: www.foss-nirsystems.com)

FPZ Inc., 150 N. Progress Drive, Saukville, Wisconsin 53080-1602 (262-268-0180; FAX: 262-268-0415; e-mail: usa@fpz.com; web site: www.fpz.com)

FQE Chemicals, Suncor Energy Centre, West Tower #5100, Ai 150 6 Ave SW T2P3Y7 (e-mail: seanconroy@fquechemicals.com)

Franken Filtertechnik KG, Germany, Max-Planck-Str. 7, Huerth 50354 (+49 2233 974 40-0; FAX: +49 2233 974 40-40; e-mail: info@frankenfilter.com; web site: www.frankenfilter.com)

Freeman Technology Inc, PO BOX 2022, Wayne, Pennsylvania 19399 (1 718 358 2058; FAX: 44 (0)1684 851 552; e-mail: info@freemantechinc.com; web site: www.freemantechinc.com)

Freudenberg Filtration Technologies SE & Co. KG, Hoehnerweg 2 - 4, Weinheim 69465 (+49 6201/80-6264; FAX: +49 6201/88-6299; e-mail: viledon@freudenberg-filter.com; web site: www.freudenberg-filter.com)

FREWITT manufacturer of machines Ltd, WE CARE ABOUT MILLING, P.O. Box 615, Fribourg 1701 (+41(0) 26 460 74 00; FAX: +41(0) 26 460 74 59; e-mail: info@frewitt.com; web site: www.frewitt.com)

Friatec AG Division Rheinhuette Pumpen, Rheingaustrasse 96-98, Wiesbaden D-65203 (49-611-604-0; FAX: 49-611-604-328; e-mail: info@rheinhuette.de; web site: www.rheinhuette.de)

FRITSCH GmbH, Milling and Sizing, Industriestrasse 8, Idar-Oberstein 55743 (0049 6784 70 0; FAX: 0049 6784 70 11; e-mail: info@fritsch.de; web site: www.fritsch.de)

Fr. Jacob Soehne GmbH & Co. KG, Niedemfeldweg 14, Porta Westfalica, NRW 32457 (49-571-9558-0; FAX: 49-571-9558-160; e-mail: post@jacob-rohr.de; web site: www.jacob-rohr.de)

FrymaKoruma, 6 Frassetto Way, Unit D, New Jersey 07035 (e-mail: raeann.seminerio@frymakoruma.com)

Fujisaki Electric, c/o AAAMachine, Inc., 1291 Rand Road, Des Plaines, IL 60016 (800-996-0070; 847-881-8264; FAX: 847-376-3530; e-mail: fujisaki-e700@aaamachine.com; web site: www.aaamachine.com/partner/fujisaki_electric)

Fulton Companies, The, Fulton Thermal Corporation, 972 Centerville Rd., Pulaski, NY 13142 (315-298-5121; FAX: 315-298-6390; web site: www.fulton.com)

G

GAMAJET, PART OF THE ALFA LAVAL GROUP, 604 Jeffers Circle, Pennsylvania 19341 (e-mail: jessica.letscher@alfalaval.com)

GARO S.P.A., Via Pompei, 15, Monza (MB) 20900 (39-039-839601; FAX: 39-039-835720; e-mail: info@garo.it; web site: www.garo.it)

Gas & Air Systems, Inc., 1304 Whitaker Street, Hellertown, Pennsylvania 18055 (610-838-9625; FAX: 610-838-9650; e-mail: seshmartin@gasair.net; web site: www.gasair.net)

G Bopp USA Inc., 4 Bill Horton Way, Wappingers Falls, NY 12590 (866.267.7544; 845.296.1065; FAX: 845.296.1282; e-mail: info@gbopp.com; web site: www.gbopp.com)

GEA Denmark (GEA Process Engineering A/S), Nj/Trskovvej 1B, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)

GEA Engineering, P.C., 100 Airport Executive Park, suite 105, Nanuet, NY 10954 (845-371-5522; 8453715522; FAX: 845-371-5526; e-mail: sgamesky@geaengineering.com; web site: www.geaengineering.com)

GEA France, 4, rue Jean-Pierre Timbaud, Montigny le Bretonneux, 78185 (+33 1 30 14 61 10; e-mail: chemical@gea.com; web site: www.gea.com)

World-leading process technology for sophisticated production processes.

- Evaporation
- Distillation
- Gas cleaning
- Membrane filtration
- Vacuum systems and ejectors

GEA Germany Ettlingen
(GEA Wiegand GmbH) Am Hardtwald 1
76275 Ettlingen
chemical@gea.com
www.gea.com

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

Core technology and application center within the GEA Group, recognized worldwide for its evaporation, distillation, crystallization and membrane filtration plants, vacuum and ejector systems and gas cleaning and cooling plants.

GEA Mechanical Equipment US, Inc, GEA Westfalia Separator Division, 100 Fairway Ct., Northvale, NJ 07647 (800-722-6622; 201-767-3900; FAX: 201-767-3416; e-mail: salesinfo@wsus.com; web site: www.gea.com)

GEA Netherlands, A0s-Hertogenbosch, De Beverspijken 7B, 's-Hertogenbosch, 5221 EE (+31-73-6390390; FAX: 31-73-6312349; e-mail: chemical@gea.com; web site: www.gea.com)

GEA Paderborn, 100 GEA Drive, York, PA 17406 (1-800-774-0474; 717-268-6200; FAX: 717-268-6162; e-mail: info.phe-systems.usa@gea.com; web site: www.gea-phe.com/usa)

GEA Refrigeration North America, 3475 Board Rd., York, PA 17406 (717-767-6411; FAX: 717-764-3627; e-mail: sales.gearna@gea.com; web site: www.gea.com)

GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)

Gebrueder Loedige Maschinenbau GmbH, Elsener Str. 7-9, Paderborn 33102 (05251-3090; FAX: 05251-309123; e-mail: info@loedige.de; web site: www.loedige.de)

Gekko Engineering, 1210 E. 223rd, Suite 301, Carson, CA 90745-4215 (310.513.0000; e-mail: info@gekkoeng.com; web site: www.gekkoeng.com)

General Monitors, 26776 Simpatica Circle, Lake Forest, CA 92630 (866-686-0741; 949-581-4464; FAX: 949-581-1151; e-mail: info@generalmonitors.com; web site: www.generalmonitors.com)

Georg Fischer Piping Systems Ltd., Schaffhausen 8201 (41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info@ps@georgfischer.com; web site: www.gfps.com)

Geroldinger GmbH, Au-Strasse 9, Sigharting, 4771 (e-mail: johannes.scherltein@geroldinger.com)

GG Instrumentation, Inc., 1194 Oak Valley Dr., Suite 20, Ann Arbor, MI 48108 (800-959-0329; FAX: 734-769-1888; e-mail: info@ggf-inc.com; web site: www.ggf-inc.com)

Gharpure Consulting Engineers Pvt Ltd, 402, Manish Plaza, NIBM Road, Pune 411048 (200-8231234; FAX: 020-40094017; e-mail: mails_0102@yehoo.com; web site: www.gharconeng.com)

GIC Thermodynamics, 12575 US 31 North, Charlevoix, MI 49720 (800-876-4442; 248-280-1648; 231-237-7000; FAX: 248-280-0998; e-mail: sales@gicthermodynamics.com; web site: www.gicthermodynamics.com)

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

International, CHEMTEK PROCESS TECHNOLOGY Inc., 3FL, No.99 Jingye 1st Road, Taipei City 104 (0886/ 2 8501 2895; FAX: 0886/ 2 8501 2875)

International, MediBalt Ltd, Priedaines Str. 13-1, Riga, Latvia (1029; FAX: +371 67373144)

International, Erun Information & Technology Co. Ltd, Room 810, National Offshore Oil Tower, Shanghai 200030 (+86 21 6487 7678; FAX: +86 21 6487 3722)

IL, GIG KARASEK LLC, 3955 Commerce Drive, St. Charles 60174 (+1 630 305 8556)

Gilbert Industries, 8150 State Hwy 14 East, Sparta, MO 65753 (417) 581-1163; FAX: (417) 581-9253; e-mail: shanen@gilbertindustries.com; web site: gilbertindustries.com/

Glasslined Technology, Inc, P O Box 7, Greensboro, Georgia 30642 (706) 347-2121; FAX: (706) 454-5905; e-mail: info@glasslined.us; web site: www.glasslined.us)

Goel Scientific Glass Works, C-31, Sarder Estate, Ajwa Rd., Baroda 390019 (0091-265-2561595; 0091-9825318944; FAX: 0091-265-2561124; e-mail: info@goelscientific.com; web site: www.goelscientific.com)

Golden Software, 809 14th St., Golden, Colorado 80401 (800-972-1021; 303-279-1021; FAX: 303-279-0909; e-mail: info@goldensoftware.com; web site: www.goldensoftware.com)

Goodway Technologies Corp., 420 West Ave., Stamford, CT 06902-6384 (800-333-7467; 203-359-4708; FAX: 203-359-9601; e-mail: goodway@goodway.com; web site: www.goodway.com)



GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsaes@gormanrupp.com; web site: www.GRPumps.com)

Gorman-Rupp pumps are constructed to handle the tough corrosive and abrasive chemicals that other pumps can't handle. You'll find our pumps handling chemicals in canneries, tanneries, automotive and chemical plants.

GOW-MAC Instrument Co., 277 Broadhead Road, Bethlehem, PA 18017 (610-954-9000; FAX: 610-954-0599; e-mail: sales@gow-mac.com; web site: www.gow-mac.com)

Great Western Mfg. Co., 2017 S. Fourth St., P.O. Box 149, Leavenworth, KS 66048 (800-682-3121; 913-682-2291; FAX: 913-682-1431; e-mail: sifter@gwrmfg.com; web site: www.gwrmfg.com)

Greene, Tweed & Co., P.O. Box 305, 2075 Detwiler Rd., Kulpsville, PA 19443 (1-800-220-4733; 215-256-9521; FAX: 215-256-0189; web site: www.gtwecd.com)

Greene, Tweed & Co. Ltd., Ruddington Fields, Nottingham, Notts NG11 6JS (0-115-99315-777; web site: www.gtwecd.com)

Greenwood Engineering Inc., P.O. Box 179, Excelsior, MN 55331 (952-474-0415; FAX: 952-474-8988; e-mail: sales@greenwoodengineering.com; web site: www.greenwoodengineering.com)

Greenwood Engineering Inc., P.O. Box 179, Excelsior, MN 55331 (952-474-0415; FAX: 952-474-8988; e-mail: sales@greenwoodengineering.com; web site: www.greenwoodengineering.com)

Greenwood Engineering Inc., P.O. Box 179, Excelsior, MN 55331 (952-474-0415; FAX: 952-474-8988; e-mail: sales@greenwoodengineering.com; web site: www.greenwoodengineering.com)

GRI Pumps, 180 Hines Ave., Bellville, OH 44813 (419-886-3001; FAX: 419-886-2338; e-mail: grsaes@gripumps.com; web site: www.gripumps.com)

G.R. Sprenger Engineering, Inc., 12930 West 6th Place, Golden, CO 80401 (303-525-9924; FAX: 303-665-5346; e-mail: Glenn@GRSEI.com; web site: www.GRSEI.com)

Guided Wave, 3033 Canal Drive, Rancho Cordova, California 95670 (916-638-4944; FAX: 916-635-8458; e-mail: GWSales@guided-wave.com; web site: www.guided-wave.com)

H

Haldor Topsoe A/S, Nymollevej 55, Lyngby DK-2800 (45-45-272000; FAX: 45-45-272999; e-mail: info@topsoe.dk; web site: www.topsoe.dk)

Hammelmann Corp., 436 Southpointe Dr, Miamisburg, OH 45342 (800-783-4935; 937-859-8777; FAX: 937-859-9188; e-mail: hmi@hammelmann.com; web site: www.hammelmann.com)

Hampshire Controls Corp., P.O. Box 516, Dover, NH 03821-0516 (866-496-9424 U.S. & Canada; 603-749-9424; FAX: 603-749-9433; e-mail: sales@hampshirecontrols.com; web site: www.hampshirecontrols.com)

Hannay Reels Inc., 553 State Rte. 143, Westerlo, NY 12193-0159 (877-GO-REELS; 518-797-3791; FAX: 800-733-5464; e-mail: reels@hannay.com; web site: www.hannay.com)

Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)

Hardy Process Solutions, Inc., Industrial Weighing, 9440 Carroll Park Dr, San Diego, CA 92121 (800-821-5831; 858-278-2900; FAX: 858-278-6700; e-mail: hardyinfo@hardysolutions.com; web site: www.hardysolutions.com)

Harper International, 4455 Genesee St, Suite 123, Buffalo, New York 14225 (716-276-9900; FAX: 716-810-9460; e-mail: info@harperintl.com; web site: www.harperintl.com)

Harrop Industries, Inc., 3470 E. Fifth Ave., Columbus, OH 43219-1787 (614-231-3621; FAX: 614-235-3699; e-mail: info@harropusa.com; web site: www.harropusa.com)

HAVER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OEALDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflow-control.com)

HEAT TRANSFER RESEARCH, INC. (HTRI), P.O. Box 1390, Navasota, Texas 77868 (+1.979.690.5050; FAX: +1.979.690.3250; e-mail: htri@htri.net; web site: www.htri.net)

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, 1550 Industrial Dr, Owosso, Michigan 48867 (989-725-8184; FAX: 989-725-8188; e-mail: sales.hee@cecoenviro.com; web site: www.hee-llc.com)

Heinkel Filtering Systems Inc., 520 Sharptown Rd., Swedesboro, New Jersey 08065 (856-467-3399; FAX: 856-467-1010; e-mail: info@heinkelsusa.com; web site: www.heinkelsusa.com)

Heinrichs Messtechnik GmbH, Robert-Perthel Str. 9, Koeln 50739 (+49(0)221-497080; FAX: +49(0)221-49708178; e-mail: info@heinrichs.eu; web site: www.heinrichs.eu)

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

UniFlow laboratory fume hoods & vented enclosures, laboratory furniture, laboratory countertops, plumbing fixtures, electrical services. Large floor mount hoods, ventilation equipment, emergency shower decontamination booths. HEPA filtered Enclosures. www.HEMCOcorp.com 800-779-4362

Henderson Industrial Specialties, 22 Flanders Dr., SSS, Waterdown, LOR 2H7 (905-690-0425; FAX: 905-690-0426; e-mail: sales@hendersonindustrial.com; web site: www.hendersonindustrial.com)

Hepa Corporation, 3071 E. Coronado St., Anaheim, CA 92806-2698 (714-630-5700; FAX: 714-630-2894; e-mail: info@hepa.com; web site: www.hepa.com)

Herbold Meckesheim USA, Resource Recycling Systems Inc., P.O. Box 239, Slatersville, RI 02876 (888-612-7774; 401-597-5500; FAX: 401-597-5535; e-mail: info@herboldusa.com; web site: www.herboldusa.com)

Hermetic-Pumpen GmbH, Gewerbestr. 51, Gundelfingen 79194 (49-761-58-300; FAX: 49-761-58-30280; e-mail: hermetic@hermetic-pumpen.com; web site: www.hermetic-pumpen.com)

Hexion Inc., Epoxy, Phenolic & Coating Resins Division, 180 East Broad Street, Columbus, Ohio 43215 (888.443.9466; 614.225.4000; FAX: 614.986.2496; e-mail: 4information@hexion.com; web site: www.hexion.com)

Heyl & Patterson Inc., Renneburg Division, PO Box 36, Pittsburgh, Pennsylvania 15230 (412-788-9810; FAX: 412-788-9822; e-mail: info@heylpatterson.com; web site: www.heylpatterson.com)

Hidden Isochema, 422 Europa Boulevard WA5 7TS (e-mail: cwardropper@hiddenisochema.com)

Hilco, 100 W Fourth St, Elmira, New York 14901 (607) 733-7121; FAX: (607) 735-0946; e-mail: hilliard@hilliardcorp.com; web site: www.hilliardcorp.com)

Hilliard Corp., 100 W. Fourth St, Elmira, NY 14902-1504 (607-733-7121; FAX: 607-737-1108; e-mail: hilliard@hilliardcorp.com; web site: www.hilliardcorp.com)

HIMA Paul Hildebrandt GmbH & Co KG, Albert-Basser-Strasse 28, Bruhl 68782 (+49 6202 709-0; FAX: +49 6202 709-107; e-mail: info@hima.com; web site: www.hima.com)

HOERBIGER Kompressortechnik Holding GmbH, Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0; FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)

HONEYWELL, 101 Columbia Rd., Morristown, New Jersey 07962 (800-626-4974; 973-455-2000; FAX: 973-455-5722)

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/sp2)

Hoover Container Solutions, 2135 HWY 6 S, Houston, TX 77077 (800-844-8683; 281-870-8402; e-mail: INFO@HOOVERSOLUTIONS.COM; web site: www.hooversolutions.com)

Hosokawa Micron B.V., Mixing, Drying & Agglomeration, P.O. Box 98, Gildenstraat 26, Doetinchem, 7000 AB (+31-314-373-333; e-mail: info@mbv.hosokawa.com; web site: www.hosokawamicron.nl)

Houston PolyTank, LLC, 208 Craig Street, Hopkins, Missouri 64461 ((660) 778-3393; FAX: (660)-778-3446; e-mail: sales@houstonpolytank.com; web site: www.houstonpolytank.com)

HRS Process Systems Ltd., 201/202, Karan Selene, 851, Bhandarkar Road, Pune, 411004 (+91 20 2566 3581; +91 20 66047894; FAX: +91 20 2566 3583; e-mail: mkt-com@hrsasia.co.in; web site: www.hrsasia.co.in)

HTT Energy GmbH, Fullenbruchstr. 183, Driesing 32015 (0049-5221-385-0; FAX: 0049-5221385-12; e-mail: sales@htt.de; web site: www.htt.de)

Hudson Products Corp., P.O. Box 36100, Houston, TX 77236-6100 (800-634-9160; 713-914-5700; FAX: 713-914-5991; e-mail: hudsonproducts@hudsonproducts.com; web site: www.hudsonproducts.com)

Hughes Safety Showers North America Inc., 457 Campbell Street N7T 2J1 (e-mail: dan.gray@hughes-safety.com)

Hydramotion Ltd., 1 York Road Industrial Park, Seven Street, Malton YO17 6YA (+44 (0) 1653 600294; FAX: +44 (0) 1653 693446; e-mail: sales@hydramotion.com; web site: www.hydramotion.com)

HydroPro Inc., Engineering & Manufacturing, 2631 Highway J, Bourbon 65441 (573.732.3318; FAX: 573.732.9408; e-mail: Sales@hpro.com; web site: www.hpro.com)

HydroTec Systems Co., Inc., 145 East Main Street, Tiskilwa, IL 61368 (815-624-6644; 815-646-4488; FAX: 815-986-4973; e-mail: warren@purehts.com; web site: www.purehts.com)

Hydro-Thermal Corp., 400 Pilot Ct., Waukesha, WI 53188 (800-952-0121; 262-548-8900; FAX: 262-548-8908; e-mail: info@hydro-thermal.com; web site: www.hydro-thermal.com)

Hypercat Advanced Catalyst Products, 1075 Andrew Drive, Suite C, West Chester, PA 19380 (610-692-3490; FAX: 610-692-3971; e-mail: info@hypercat-acp.com; web site: www.hypercat-acp.com)

Hyspan Precision Prod. Inc., 1685 Brandywine Ave., Chula Vista, CA 91911 (619-421-1355; FAX: 619-421-1702; e-mail: websales@hyspan.com; web site: www.hyspan.com)

Idealab Inc., 305 Union Street, P. O. Box 427, Franklin, MA 02038 (508 528 9260; e-mail: info@idealab.us; web site: www.idealab.us)

IGW - IG Watteeuw International nv, Headquarters, Kampveldstraat 51, Oostkamp 8020 (+32 50 82 69 07; +1 740 588 1722; FAX: +32 50 82 69 74; e-mail: info@igwpower.com; web site: www.igwpower.com)

IKA-Werke GmbH & Co.KG, Janke & Kunkel-Str. 10, Staufen 79219 (+49 7633 831-0; FAX: +49 7633 831-907; e-mail: process@ika.de; web site: www.ikaprocess.com)

IMPCCO, Inc., 27 Dexter Road, P.O. Box 14666, East Providence, RI 02914 (800-779-2491; 401-521-2490; FAX: 401-521-5690; e-mail: mail@impcco-inc.com; web site: www.impcco-inc.com)



INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

Industrial Magnetics, Inc., 01385 M-75 S., Boyne City, Michigan 49712 (888-582-0821; 231-582-3100; FAX: 231-582-0622; e-mail: imi@magnetics.com; web site: www.magnetics.com)

InfoMetric, Inc., 11807 N. Creek Pkwy S., Suite B-111, Bothell, Washington 98011 (425-402-1450; FAX: 425-402-1040; e-mail: info@infomatrix.com; web site: www.infomatrix.com)

Inline Industries, Inc., 9056 Garvey Ave., Rosemead, California 91770 (800-568-8998; e-mail: info@ballvalve.com; web site: www.ballvalve.com)

Innovative Processing Solutions, PO Box 299, Aurora, IN 47001 (877-926-0040; FAX: 812-926-3482; e-mail: info@innovative-processing.com; web site: www.innovative-processing.com)

INOX-TECH INC., 6705 Route 132, Ste. Catherine J5C1B6 (800-361-0319 North America; 450-638-5441; FAX: 450-638-2865; e-mail: info@inox-tech.com; web site: www.inox-tech.com)

Interdevelopment, Inc., POB 15249, Arlington, VA 22215 (01 202 508 1459; e-mail: intbusiness04@yahoo.com; web site: www.interdevelopment.com)

Intergraph Benelux BV, Siriusdreef 2, Hoofdord 2132 WT (+31 23 6666 666; FAX: +31 23 5666 665; e-mail: information-europe@intergraph.com; web site: www.intergraph.com/global/nl)

Intergraph Corporation, 7840 N. Sam Houston Pkwy W., Suite 200, Houston, Texas 77064 ((281) 671-1528; FAX: (281) 671-1556; web site: www.intergraph.com)

Intergraph Corporation Corporate Headquarters, 19 Interp Road, Madison, AL 35758 (800.345.4856; 256-730-2000; FAX: 256.730.2048 ; web site: www.intergraph.com/contact/contact_info.asp)

Invensys Systems (UK) Ltd, Manor Royal, Crawley RH10 7QU (+44 1293643200; FAX: +44 1293 641312; e-mail: invensys.ion.uk@invensys.com; web site: www.ion.invensys.com)

Iron, Inc., 1201 Shaffer Rd, Bldg. 2, Santa Cruz, CA 95060 (800-323-7660; 847-967-5151; FAX: 831-458-1497; e-mail: sales@iron.com; web site: www.iron.com)

Iris Inspection Services, Inc., 5400 Decker Dr, Baytown, Texas 77520-1448 ((281) 424-3200; FAX: (281) 424-3223; e-mail: bil@iris-inspection.com; web site: www.iris-inspection.com)

Isotech, Inc, 777 Schwab Rd., Suite T, Hatfield, PA 19400 (800-314-3332; 267-663-555; FAX: 215-631-9148; e-mail: info@isotechinc.com; web site: www.isotechinc.com)

ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-470110; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

ITT, Engineered Valves, 313 Centerville Rd., Lancaster, PA 17603 (800-366-1111; 717-509-2200; FAX: 717-509-2336; e-mail: envvalves.custserv@itt.com; web site: www.envvalves.com)

ITT, Ai Goulds Pumps, 240 Fall Street, Seneca Falls, New York 13148 (web site: www.gouldspumps.com)

ITW Polymers Adhesives, North America, 30 Endicott St., Danvers, MA 01923 (800-933-8266; 978-777-1100; FAX: 978-774-0516; e-mail: info@devcon.com; web site: www.itwadhesives.com)

Iwaki America, 5 Boynton Rd., Holliston, MA 01746 (508-429-1440; FAX: 508-429-1386; e-mail: info@iwakiamerica.com; web site: www.iwakiamerica.com)

J

Jacobi Carbons, Inc., 432 McCormick Blvd., Columbus, OH 43213 (215 546-3900; FAX: 215 546-9921; e-mail: info@jacobi.net; web site: www.jacobi.net)



JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

Jaygo is a supplier of high quality process equipment for the chemical industry, specializing in mixing of medium-to-high viscosity products as well as a wide range of solids blending equipment. Test and rental machines are available for customers

JENIKE & JOHANSON INC., 400 Business Park Dr., Tynsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

JLS International, Inc., PO Box 240948, Charlotte, North Carolina 28224-0948 (704-679-9575; FAX: 704-679-9574; e-mail: info@jlsintl.com; web site: www.jlsintl.com)

Johnson Matthey Davy Technologies Ltd., 10 Eastbourne Terrace, London W2 6LG (44-207-957-4120; FAX: 44-207-957-3535; e-mail: dpt@davyprotech.com; web site: www.davyprotech.com)

Johnson Matthey Davy Technologies Ltd., 10 Eastbourne Terrace, London, W2 6LG (44-207-957-4120; FAX: 44-207-957-3535; e-mail: jmdavy@matthey.com; web site: www.davyprotech.com)

John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzink.com) (918.234.2800)

JUMO GmbH & Co. KG, Moritz-Juchheim-Strasse 1, Fulda 36039 (49 661 6003-0; FAX: 49 661 6003-500; e-mail: mail@jumo.net; web site: www.jumo.net)

K

KAIVAN ENGINEERS, 204/205 Madhav Complex, R C DUTT ROAD, VADODARA 390007 (e-mail: anish@kaivanvadi.com)

KAP Project Services, 1200 Highway 146 South, #260, La Porte, Texas 77571 (281) 842-8333; FAX: (281) 842-8335; web site: www.kaprojectservices.com

Kason Corp., 67-71 E. Willow St., Millburn, New Jersey 07041-1416 (973-467-8140; FAX: 973-258-9533; e-mail: info@kason.com; web site: www.kason.com)

KDF Fluid Treatment, Inc., 1500 KDF Dr., Three Rivers, MI 49093-9287 (800-437-2745; 269-273-3300; FAX: 269-273-4400; e-mail: info@kdff.com; web site: www.kdfff.com)

Kemutec Group, Inc., 130 Wharton Rd., Keystone Industrial Park, Bristol, PA 19007 (215-788-8013; FAX: 215-788-5113; e-mail: sales@kemutecusa.com; web site: www.KemutecUSA.com)

Key Resin Company, 4050 Clough Woods Drive, Ohio 45103 (e-mail: eborglum@keyresin.com)

Keystone Filter, a CECO Environmental Company, 700 Emlen Way, Telford, Pennsylvania 18969 (800-822-1963; 215-822-1963; FAX: 215-997-1839; e-mail: filters@keystonefilter.com; web site: www.keystonefilter.com)

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33003 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

International, Distributed by: WATERLEAU France, ZI du Vert Galant, 21 avenue des Gros Clevaus, CS 30015 ST. OEN L'AUMONE, Cergy Pointoise Cedex 1 F-95046 (+33 (0) 1 34 35 11 50; FAX: +33 (0) 1 34 35 11 51)

International, Distributed by: Evergreen Technologies, Pvt. Ltd., 3-D Maker Bhavan-2, 18 New Marine Lines, Mumbai 400 020 (+91 22-6156 6969; FAX: +91 22-2201 0024)

Kinergy Corp., 7310 Grade Lane, Louisville, KY 40219 (502-366-5685; FAX: 502-366-3701; e-mail: kinergy@kinergy.com; web site: www.kinergy.com)

KINESPIN, Division of Kinefac Corporation, 156 Goddard Memorial Drive, Worcester, Massachusetts 01603-1260 (508-754-6891; e-mail: kinespin@kinefac.com; web site: www.kinespin.com)

KIRK Process Solutions Ltd, Kirk House, 161 Park Close, Walton-on-Thames KT12 1EW (01932 250300; e-mail: info@kirkprocess.com; web site: www.kirkprocess.com)

Kloepfer-Therm GmbH & Co. KG, Unterste-Wilms-Str. 21, Dortmund D-44143 (+49 231 5178 0; FAX: +49 231 5178 333; e-mail: sales@kloepfer-therm.de; web site: www.kloepfer-therm.de)

KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)

Knighthawk Engineering, 17625 El Camino Real, Suite 412, Houston, TX 77058 (281) 282-9200; FAX: (281) 282-9333; e-mail: hawkwork@knighthawk.com; web site: www.knighthawk.com)

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Koch Knight, LLC, 5385 Orchardview Dr., P.O. Box, East Canton, Ohio 44730 (330-488-1651; FAX: 330-488-1656; e-mail: wrtp@kochind.com; web site: www.kochknight.com)

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Koflo Corp., 309 Cary Point Dr., Cary, IL 60013 (800-782-8427 U.S., Canada; 847-516-3700; FAX: 847-516-3724; e-mail: info@koflo.com; web site: www.koflo.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North America; 908-234-1000; FAX: 908-234-9487)

Konica Minolta Sensing Americas, 101 Williams Drive, Ramsey, NJ 07446 (1-888-473-2656; 201-818-3526; e-mail: marketing.SUS@konicanminolta.com; web site: sensing.konicanminolta.us)

See our ad on page 137

International, Komline-Sanderson, 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North America; 908-234-1000; FAX: 908-234-9487)

Konica Minolta Sensing Americas, 101 Williams Drive, Ramsey, NJ 07446 (1-888-473-2656; 201-818-3526; e-mail: marketing.SUS@konicanminolta.com; web site: sensing.konicanminolta.us)

K-Patents, Inc., 1804 Centre Point Circle, Ste. 106, Naperville, IL 60563 (630-955-1545; FAX: 630-955-1585; e-mail: info@kpatents.com; web site: www.kpatents.com)



KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4757; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.trainers.com)

KREISEL GmbH & Co. KG, Muehlenstrasse 38, Krauschwitz 02957 (+49 35771 98-0; FAX: +49 35771 60798; e-mail: info@kreisel.eu; web site: www.kreisel.eu)

KRUSS GmbH, Marketing, Borsteler Chaussee 85, Hamburg 22453 (+49/40/514401-0; FAX: +49/40/514401-98; e-mail: info@kruss.de; web site: www.kruss.de)

K-Sun Corporation, 370 SMC Drive, PO Box 309, Somerset, WI 54025 (800-622-6312 USA; 715-247-4440; FAX: 715-247-4003; e-mail: info@ksun.com; web site: www.ksun.com)

kubit USA, 401 Studewood, Suite 205, Houston, Texas 77007 (800)-259-4014; FAX: (800) 313-1391; e-mail: info@kubitusa.com; web site: www.kubitusa.com

Kubota Corporation, 79 Robinson Road, #20-06, Singapore 068897 (6562241919; FAX: 6562245213; e-mail: kubota@singnet.com.sg; web site: www.kubota-feeders.com)

Kurz Instruments Inc., 2411 Garden Road, Monterey, CA 93940 (8004247356; 831-646-5911; 8004247356; e-mail: sales@kurzinstruments.com; web site: www.kurzinstruments.com/)

L

LA-MAN Corp., PO Box 328, Mazeppa, MN 55956 (800-348-2463; 507-843-4800; FAX: 888-905-2626; e-mail: info@laman.com; web site: www.laman.com)

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

LAR Process Analysers AG, Neukoellnische Allee 134, Berlin 12057 (+49 30 278958-46; FAX: +49 30 278958-703; e-mail: sales@lar.com; web site: www.lar.com)

LAUDA DR. R. WASSER GMBH & CO. KG, Pfarrstrasse 41/43, Luda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

LECO Corporation, 3000 Lakeview Ave., St. Joseph, MI 49085 (800-292-6141; 269-985-5496; FAX: 269-982-8977; e-mail: info@leco.com; web site: www.leco.com)

Lectrodryer, P.O. Box 2500, Richmond, KY 40476-2602 (859-624-2091; FAX: 859-623-2436; e-mail: info@lectrodryer.com; web site: www.lectrodryer.com)

Lectrus, 2215-C Olan Mills Drive, Chattanooga, TN 37421 (800-445-8791 US; 423-894-9268; FAX: 423-553-6166; e-mail: info@lectrus.com; web site: www.lectrus.com)

Leister Technologies AG, Galileo-Strasse 10, Kaegiswil CH- 6056 (41-41-66274-74; FAX: 41-41-662-74-16; e-mail: leister@leister.com; web site: www.leister.com)

Leistriz, Extrusion, 169 Meister Avenue, Somerville, NJ 08876 (908-685-2333; FAX: 908-685-0247; e-mail: sales@alec-usa.com; web site: www.leistriz-extrusion.com)

LESER LLC, 10615 Texland Blvd., Ste. 100, Charlotte, NC 28273 (e-mail: www.leser.com)

Levelese, Inc, 326 Steele St, Denver, Colorado 80206 (3035861425; e-mail: sales@levelese.com; web site: www.levelese.com)

LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

International, Bolschaya Poljanka 44/2 office 344, Moscow 119180 (+7 495 64027-73; FAX: +7 495 64027-75)

International, LEWA Pumps (Dalian) Co., Ltd., No. 86 Liaohedong Road, DD Port, Dalian 116600 (+86 411 8758-1477; FAX: +86 411 8758-1478)

International, POMPE LEWA S.A.R.L., 5-9 Rue d'Estienne d'Orves, Z. A. des Sureaux, Sarrouville 78500 (+33 1 3086 7480; FAX: +33 1 308674-97)

International, Herbert Ott AG, Nenzlingerweg 5, Reinach 1 4153 (+41 61 7179 400; FAX: +41 61 7179 401)

International, POMPE LEWA S.R.L., Via Vincenzo Monti 52, Mazzo di Rho 20017 (+39 02 93468-61; FAX: +39 02 93468-62)

International, LEWA SULAMERICANA Ltda., Rua Georg Rexroth 609, Bloco E Conj. 2, Diadema 09951-970 (+55 11 4075 9999; FAX: +55 11 4071 9920)

International, P. O. Box 261900, Jebel Ali Free Zone, Dubai RA85C06 (+971 4 8870999; FAX: +971 4 8870998)

International, Velhovens vei 1, Sandnes 4319 (+47 529091-00; FAX: +47 529091-01)

International, NIKKISO CO. LTD, Yebisu Garden Place Tower 22nd Floor, 20-3, Ebisu 4-Chome, Shibuya-ku, Tokyo 150-6022 (+81 3 3443-3711; FAX: +81 3 3473-4963)

International, LEWA ASIA HERBERT OTT PTE. LTD., Bld. 1 Clementi Loop, Clementi West Logispark #02-06, Singapore 129808 (+65 6861 7127; FAX: +65 6861 6506)

International, LEWA Herbert Ott Espana, S.L., Consejo de Ciento 295, 4-1/2, Barcelona 08007 (+34 93 2247 740; FAX: +34 93 2247 741)

International, LEWA Herbert Ott KG, Diefenbachgasse 35/39, Wien 1150 (+43 1 8773 0400; FAX: +43 1 8773 04029)

MA, AMERICAN LEWA, Inc., 132 Hopping Brook Road, Holliston 01746 ((888) 539-2123; +1 508 4297 403; FAX: +1 508 4298 615)

LEWCO, Inc., 706 Lane St., Sandusky, OH 44870 (419-625-4014; FAX: 419-625-1247; e-mail: sales@lewcoinc.com; web site: www.lewcoinc.com)

Lightning Eliminators & Consultants, Inc., 6687 Arapahoe Rd., Boulder, CO 80303 (800-521-6101; 303-447-2828; FAX: 303-447-8122; e-mail: info@lightning-protection.com)

Linde AG, Engineering Division, Dr.-Carl-von-Linde-Str. 6-14, Pullach 82049 (+49-89-7445-0; FAX: +49-89-7445-4908; e-mail: info@linde-le.com; web site: www.linde-engineering.com)

Liquid Filtration Specialist, LLC, p o box 1064, Texas 77305-1064 (e-mail: info@filterconsultant.com)

Liquid Process Systems, inc., 1025 Technology Drive, Suite A, Indian Trail, North Carolina 28079 (704-821-1115; FAX: 704-821-1190; e-mail: info@lps-filtration.com; web site: www.lps-filtration.com)

LIST AG, Berstelstrasse 24, Arisdorf 4122 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

Lloyd's Register Quality Assurance Ltd., 1401 Enclave Parkway, Ste. 200, Houston, TX 77077 (281-398-7370; FAX: 281-398-7337; web site: www.lrenergy.org/)

L&L Special Furnace Co., Inc., 20 Kent Road, Aston, Pennsylvania 19014 (877-846-7628; 610-459-9216; FAX: 610-459-3689; e-mail: sales@lflfurnace.com; web site: www.lflfurnace.com)

Load Cell Central, 28175 Route 220, Pennsylvania 18831 (e-mail: paula@00loadcell.com)

LOAD CONTROLS, INC., 53 Technology Park Rd., Sturbridge, Massachusetts 01566 (888-600-3247; 508-347-2606; FAX: 508-347-2064; web site: www.loadcontrols.com)

See our ad on page 25

Logical Technology, Inc., 6907 N. Knoxville Ave., Peoria, IL 61614 (800-266-7591; 309-689-2900; FAX: 309-689-2911; e-mail: logical@comp1y.com; web site: www.comp1y.com)

LOTUS MIXERS INC., 3448 TECHNOLOGY DRIVE - #201, North Venice, FL 34275 (941 966-1885; e-mail: Info@lotusmixers.com; web site: www.lotusmixers.com)

Lucifer Furnaces Inc., 2048 Bunnell Rd., Warrington, PA 18976 (800-378-0095; 215-343-0411; FAX: 215-343-7388; e-mail: info@luciferfurnaces.com; web site: www.luciferfurnaces.com)

LUDECA, INC., 1425 NW 88th Ave, Doral, FL 33172 (305-591-8935; FAX: 305-591-1537; e-mail: info@ludeca.com; web site: www.ludeca.com)

Ludman Industries, 4810 North 124th Street, Milwaukee, WI 53225 (414-431-3500; FAX: 414-431-1850; e-mail: sales@ludman.net; web site: www.ludman.net)
Luma Comfort, 3419 E. Chapman Ave. Suite 190, Orange, CA 92669 (7272663678; e-mail: sales@lumacomfort.com; web site: www.lumacomfort.com)
LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)
Lyntek Inc., 1550 Dover Street, Lakewood, CO 80215 (303-623-8365; 303-623-0623; FAX: 303-623-0342; e-mail: information@lyntek.com; web site: www.lyntek.com)

M

Maag Pump Systems AG, Aspstrasse 12, Oberglatt / ZH, 8154 (0041 44 278 82 00; e-mail: welcome@maag.com; web site: www.maag.com)
Madison Co., 27 Business Park Dr., Branford, CT 06405-2931 (800-466-5383 (US & Canada) (US & Canada); 203-488-4477; FAX: 203-481-5036; e-mail: info@madisonco.com; web site: www.madisonco.com)
Magnetic Products, Inc., P.O. Box 529, 683 Town Center Dr., Highland, MI 48357 (800-544 5930; 248 887 5600; FAX: 248 887 6100; e-mail: info@mpimagnet.com; web site: www.mpimagnet.com)
Mallard Creek Polymers, Inc., 8901 Research Drive, Charlotte, NC 28262 (1-877-240-0171; 1-877-240-0171; 1-704-547-0622; FAX: 1-704-503-5054; e-mail: bharr@mcpolymers.com; web site: www.mcpolymers.com)
MAN Diesel & Turbo SE, Stadtbachstrasse 1, Augsburg 86153 (+49)(0)821-3220; FAX: 49 (0)821-322 3382; e-mail: turbomachinery@mandieselturbo.com; web site: www.mandieselturbo.com)
manning & Lewis, 848 east 43rd street, New York 11210 (e-mail: mike@manninglewis.com)
manning&lewis div rubicon industries corp, 848 East 43rd Street, Brooklyn, New York 11210 (800-662-6999; 718-434-4700; 908-687-2400; e-mail: sales@manninglewis.com)
Markland Specialty Engineering Ltd., 305 Armstrong Avenue, Unit 9, Georgetown, L7G 4X6 (1-855-873-7791 North America; 905-873-7791; 905-873-9426; FAX: 905-873-6012; e-mail: markland@sludgecontrols.com; web site: www.sludgecontrols.com)
Mars Mineral, P.O. Box 719, Mars, PA 16046 (724-538-3000; FAX: 724-538-5078; e-mail: info@marsmineral.com; web site: www.marsmineral.com)
Martin Engineering, One Martin Place, Neponset, IL 61345 (800-544-2947; 309-852-2384; FAX: 800-814-1553; e-mail: info@martin-eng.com; web site: www.martin-eng.com)
Martin Vibration Systems, 990 Degurse Ave., Marine City, MI 48039 ((800) 474-4538; (810) 765-7460; FAX: (810) 474-4538; e-mail: mikel@shake-it.com; web site: www.Shake-it.com)
Material Transfer & Storage Inc., 1214 Lincoln Rd., P.O. Box 218, Allegan, MI 49010-0218 (800-836-7068; 269-673-2125; FAX: 269-673-4883; e-mail: sales@material-transfer.com; web site: www.materialtransfer.com)
Matsushima Measure Tech, c/o AAAMachine, 1291 Rand Rd., Des Plaines, IL 60016 (800-996-0070 USA, Canada; 847-481-8264; FAX: 847-376-3530; e-mail: matsushimam700@aaamachine.com; web site: www.aaamachine.com/partner/matsushimamatsushima-usa.html)
McGill AirClean LLC, 1777 Refugee Road, Columbus, OH 43207-2119 (614-829-1200; FAX: 614-445-8759; e-mail: sales@mcgillairclean.com; web site: www.mcgillairclean.com)
McGill AirFlow LLC, One Mission Park, Groveport, OH 43125 (614-829-1200; FAX: 614-829-1291; e-mail: marketing@mcgillairflow.com; web site: www.mcgillairflow.com)
McGill AirPressure LLC, 1777 Refugee Road, Columbus, OH 43207 (614-829-1200; FAX: 614-445-8759; e-mail: sales@mcgillairpressure.com; web site: www.mcgillairpressure.com)
McGill AirSilence LLC, 2400 Fairwood Avenue, Columbus, OH 43207-2700 (614-829-1200; FAX: 614-829-1488; e-mail: sales@mcgillairsilence.com; web site: www.mcgillairsilence.com)
McPherson, 7A Stuart Road, Chelmsford, Massachusetts 01824-4107 (800-255-1055 Contiguous 48; 978-256-4512; FAX: 978-250-8625; e-mail: mcp@mcphersoninc.com; web site: www.mcphersoninc.com)
M&C TechGroup, 6019 Olivas Park Drive, Ste G, Ventura, CA 93003 (805) 654 6970; FAX: (805) 654 6971; e-mail: info@mc-techgroup.com; web site: www.mc-techgroup.com)
McWane and Associates, P.O. Box 5516, San Jose, California 95150 (559-230-1442; e-mail: mcwane@material-site.com; web site: www.materialsite.com)
Mefiag, a CECO Environmental Company, 1550 Industrial Drive, Owosso, Michigan 48867 (989 725 8184; FAX: 989 729 1013; e-mail: mefiag@cecoenviro.com; web site: www.mefiag.com)
Mehr Compression GmbH, Rosenfelder Str. 35, Balingen D-72336 (+49 7433 26 05 0); FAX: +49 7433 26 05 41; e-mail: sales@mehrer.de; web site: www.mehrer.de)
Meissner Filtration Products, 1001 Flynn Road, Camarillo, California 93012 (800-391-9458; 805-388-9911; FAX: 805-388-5948; e-mail: info@meissner.com; web site: www.meissner.com)

Membrana, 13800 South Lakes Dr., Charlotte, NC 28273 (704-587-8888; FAX: 704-587-8610; e-mail: info@liqui-cel.com or info@liqui-flux.com; web site: www.liqui-cel.com or www.liqui-flux.com)
Metal Samples Co., 152 Metal Samples Rd., Munford, 36268 (256-358-4202; FAX: 256-358-4515; e-mail: msc@alspi.com; web site: www.metalsamples.com)
Metano IBC Services, Inc., 2 Merkin Drive, Ferrineville, NJ 08535 (800-634-4128; 732-566-9600; FAX: 732-792-2402; e-mail: info@metanousa.com; web site: www.metanousa.com)
Met-Pro Global Pump Solutions, a CECO Environmental Company, 700 Emlen Way, Telford, Pennsylvania 18969 (800-392-7621; 215-723-8155; FAX: 215-723-2197; e-mail: info@mp-gps.com; web site: www.mp-gps.com)
Metso Flow Control Inc, Vanha Porvoontie 229, Vantaa, Finland, 01301 (+358 20 483 150; FAX: +358 20 483 151; e-mail: info@metso.com; web site: www.metso.com/valves)
Metso Minerals Industries, Inc., 2715 Pleasant Valley Road (zip 17402), P.O. Box 15043, York, PA 17405 (717-843-8671; 800-479-0362; FAX: 717-845-5154; e-mail: minerals.info@metso.com; web site: www.metso.com)
Mettler-Toledo, Inc., 1900 Polaris Pkwy., Columbus, OH 43240-4518 (800-523-5123; 614-438-4511; FAX: 614-438-4518; e-mail: indinfo@mt.com; web site: www.mt.com)
Meyer Tool & Mfg., Inc., 4601 w. southwest highway, oaklawn, IL 60453 (7084259080; 7732308168; FAX: 7084252612; e-mail: m.carr@mtm-inc.com)
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)
Microdyn Technologies, Inc., 2700 Sumner BLVD, Suite 136, Raleigh, North Carolina 27616 (919-341-5936; FAX: 919-341-5935; e-mail: info@microdyn-nadir.com; web site: www.microdyn-nadir.com)
Microfluidics, 30 Ossipee Rd., Newton, MA 02464-9101 (800-370-5452; 617-969-5452; FAX: 617-965-1213; e-mail: mixinginfo@idexcorp.com; web site: www.microfluidicscorp.com)
MICROMO, 14881 Evergreen Ave., Clearwater, FL 33762-3008 (800-807-9166; 727-572-0131; FAX: 727-573-5918; e-mail: info@micromoco.com; web site: www.micromoco.com)
Micromold Products, Inc., 7 Odell Plaza #133, Yonkers, New York 10701 (914-969-2850)
MIDAC Corp., 6 Coleman Ave, Westfield, MA 01085 (e-mail: info@midac.com; web site: www.midac.com)
Midwesco Filter Resources, Inc., P.O. Box 2075 (22604), 385 Baille Rd., Winchester, VA 22601 (800-336-7300; 540-667-8500; FAX: 540-667-9074; e-mail: sales@midwescocolfilter.com; web site: www.midwescocolfilter.com)
Midwest Steel Company Inc, 9825 Moers Road, Houston, Texas 77075 (713) 991-7843; FAX: (713) 991-4745; web site: www.midwest-steel.com)
Milamar Coatings L.L.C., 311 NW 122 St, Suite 100, Oklahoma City, OK 73114 (800-459-7659; 405-755-8448; FAX: 405-755-8450; e-mail: milamar@casspolymers.com; web site: www.milamar.com)
MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)
Mil-Ram Technology, Inc., 4135 Business Center Drive, Fremont, CA 94538 (888-464-5726; 510-656-2001; FAX: 510-656-2004; e-mail: sls@mil-ram.com; web site: www.mil-ram.com)
Milward Alloys, 500 Mill Street, Lockport, NY 14094 (800-833-6600; 716-434-5536; FAX: 716-434-3257; e-mail: Milward@milward.com; web site: www.milward.com)
MM Industries, Inc., Vorti-Siv, 36135 Salem Grange Rd., PO Box 720, Salem, OH 44460 (800-227-7487 USA; 330-332-4958; 330-332-0545; FAX: 330-332-1543; e-mail: info@vorti-siv.com; web site: www.vorti-siv.com)
Mobile Modular, 4445 East Sam Houston Pkwy South, Pasadena, Texas 77505 (866) 361-1888; (281) 487-9222; FAX: (281) 487-1289; web site: www.mobilemodularrents.com)
Modern Process Equipment, Inc., 3125 S. Kolín Ave., Chicago, IL 60623 (773-254-3929; FAX: 773-254-3935; e-mail: solution@mpechicago.com; web site: www.mpechicago.com)
M. O. Industries, 9 Whippary Rd, Unit B1-2, Whippary, NJ 07981 (973-386-9228; FAX: 973-428-0221; e-mail: sales@moindustry.com; web site: www.moindustry.com)
MoistTech Corp., 1283 Tallevast Rd, Sarasota, FL 34243 (9413517870; 9413517870; FAX: 9413517870; e-mail: afordham@moisttech.com)
Mokon, 2150 Elmwood Ave., Buffalo, NY 14207 (716-876-9951; FAX: 716-874-8048; e-mail: sales@mokon.com; web site: www.mokon.com)
Momentive Performance Materials Inc., 260 Hudson River Road, Waterford, New York 12188 (888-295-2392; 614-986-2495; 614-986-2496; e-mail: 4info@momentive.com; web site: www.momentive.com)
Monitor Technologies LLC, 44W320 Kesling Rd., Elburn, IL 60119 (800-601-6204 US & Canada; 630-365-9403; FAX: 630-365-5646; e-mail: monitor@monitortech.com; web site: www.monitortech.com)

Moore Industries International, Inc., 16650 Schoenborn St., North Hills, CA 91343 (800-999-2900 Within United States; 818-894-7111; FAX: 818-891-2816; e-mail: info@miinet.com; web site: www.miinet.com)
Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)
MTR Software, 77 Carlton Street, Suite 808, Toronto, M5S 2S6 (416-596-1499; e-mail: support@fital.com; web site: www.fital.com)
MTS World, LLC, 26511 Opal Hollow Lane, Cypress, Texas 77433 (314-258-3536; e-mail: mts@mtsworld.com; web site: www.mtsworld.com)
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
See our ad on page 24



MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: technifo@multitherm.com; web site: www.multitherm.com)
Munson Machinery Company, Inc., 210 Seward Avenue, Ulica, New York 13502-5750 (800-944-6644; 315-797-0090; FAX: 315-797-5582; e-mail: info@munsonmachinery.com; web site: www.munsonmachinery.com)
Munters Corporation, 225 S. Magnolia Avenue, Buena Vista, VA 24416 (800-843-5360; 540-291-1111; FAX: 540-291-3333; e-mail: dhinfo@munters.com; web site: www.munters.us)
Munters Corporation, Air Treatment, 79 Monroe St., P.O. Box 640, Amesbury, MA 01913-0640 (800-843-5360; 978-241-1100; FAX: 978-241-1214; e-mail: dhinfo@munters.com; web site: www.munters.us)
Munters Corporation, Zeol, 79 Monroe Street, Amesbury, MA 01913-0600 (800-843-5360; 978-241-1100; FAX: 978-241-1220; e-mail: dhinfo@munters.com; web site: www.munters.us)
Munters GmbH, Hans-Dunker-Str. 8 21035 (e-mail: andrea.lindemann@munters.de)
Musco Engineering Associates, 375 Morgan Lane, Unit 307, West Haven, CT 06516 (203-932-1901; FAX: 203-931-1550; e-mail: mmusco@muscoengineering.com)
M+W Central Europe GmbH, Lotterbergstr. 30 70499 (e-mail: contact.ce@mwgroup.net)
Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)
See our ad on page 23

N

Nantong Fareast Chemical Equipment Co. LTD, International Trading, Yuanqiao Industrial Park, Qinzhao Town, Nantong 226011 (+86 81 831 8596297; FAX: +86 513 83564755; e-mail: sale@graphitequip.com; web site: www.graphitequip.com)
Nash, a Gardner Denver Product, PO Box 130, Bentleyville, PA 15314 (800-553-NASH; 7242391500; 7242391500; FAX: 724-239-1502; e-mail: nash@gardnerdenver.com; web site: www.GDNash.com)
Nash Europe Ltd., Road One, Industrial Estate, Winsford, Cheshire CW7 3PL (44-1606-542400; FAX: 44-1606-542434; e-mail: nash@gardnerdenver.com; web site: www.GDNash.com)
National Pump Company, 7706 N. 71st Ave., Glendale, AZ 85303 (800-966-5240; 623-979-3560; FAX: 623-979-2177; e-mail: info@natpump.com; web site: www.nationalpumpcompany.com)
NETZSCH Pumpen & Systeme GmbH, Geretsrieder Str. 1, Waldkraiburg, 84478 (+49 8638 63 0; FAX: +49 8638 64881; e-mail: info.nps@netszsch.com; web site: https://pumpen.netszsch.com/de/)
NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-7271-500; FAX: +49-40-7271-550; e-mail: sales@neuhau-neotec.de; web site: www.neuhau-neotec.de)
NewAge Industries, Inc., 145 James Way, Southampton, PA 18966 (800-506-5924 US Only; 215-526-2300; FAX: 215-526-2190; e-mail: info@newageindustries.com; web site: www.newageindustries.com)
Newman Regency Group, 12705 S. Kirkwood, Stafford, TX 77429 (281) 980-7448; FAX: (281) 980-7447; e-mail: jeff@newmanregency.com; web site: www.newmanregencygroup.com)
Newson Gale Ltd, Omega House, Private Road 8, Colwick, Nottingham NG4 2JX (44-115-940-7500; FAX: 44-115-940-7501; e-mail: groundi@newson-gale.co.uk; web site: www.newson-gale.com)
NewGen Enviro Systems Inc., 190 East Hoffman Avenue, Lindenhurst, NY 11757 (800-842-1630; 631-226-2930; FAX: 631-226-3125; e-mail: info@newgenenviro.com; web site: www.newgenenviro.com)

Nier Systems Inc, 6678 Newport Lake Circl, Boca Raton, Florida 33496 (1-561-989-0049; FAX: 1-561-995-6763; e-mail: niersyst@bellsouth.net; web site: www.niersystems.com)

Niles Steel Tank, 725 Talamore Drive, Ambler, PA 19002 (215-641-2114; FAX: 215-646-7984; e-mail: info@nilesst.com; web site: www.nilesst.com)



NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
See our ad on page 15

Nordson SEALANT EQUIPMENT, 45677 Helm St., P.O. Box 701460, Plymouth, MI 48170 (734-459-8600; FAX: 734-459-8686; e-mail: sales@sealantequipment.com; web site: www.sealantequipment.com)

Northwest Analytics, Inc., 111 SW Fifth Avenue #800, Portland, OR 97204 (888-692-7638; 503-224-7727; FAX: 503-224-5236; e-mail: nwa@nwasoft.com; web site: www.nwasoft.com)

O

Obetego, PO Box 487, 100 Gradyville Road, Glen Mills, Pennsylvania 19342 ((610) 459-1631; e-mail: obetego@gmail.com; web site: www.obetego.com)

OHL Guterath Industrial Valves GmbH, Helmer-schauser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterath.de; web site: www.ohl-guterath.de)

Omega Engineering Inc., One Omega Dr., P.O. Box 4047, Stamford, Connecticut 06907-0047 (800-826-6342; 203-359-1660; FAX: 203-359-7700; e-mail: info@omega.com; web site: www.omega.com)

Omnii-Lift, Inc., 1485 S. 900 W., Salt Lake City, UT 84115-5137 (801-486-3776; FAX: 801-486-3780; e-mail: omniibelt@aol.com; web site: www.omni-lift.com)

ONLY Technology Ltd., wuhan, China (e-mail: info@only-whdf.com; web site: www.onlywhdf.com)

optek-Danulart, Inc., N118W18748 Bunsen Drive, Germantown, WI 53022 (888-864-4288; e-mail: chem@optek.com; web site: www.optek.com)

Optel Vision, 2680 Blvd du Parc Technologique G1P 4S6 (e-mail: ken.fallu@optelvision.com)

OR Co 0908 002, 123 Fake Street, #333, New York 10023 (e-mail: nt0908-002@bogusmail.com)

ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)

Oseco, 1701 W. Tacoma, P.O. Box 1327, Broken Arrow, OK 74013-1327 (800-395-3475; 918-258-5626; FAX: 918-251-2809; e-mail: sales@oseco.com; web site: www.oseco.com)

Osram Sylvania, 100 Endicott St., Danvers, MA 01923-3623 (800-544-4828; 978-777-1900; FAX: 978-750-2152; web site: www.sylvania.com)

Outotec (USA), Inc., 8280 Stayton Dr., Ste M, Jussup, Maryland 20794 ((301) 543 1200; e-mail: filters@outotec.com)

Oxford Lasers, Inc., 2 Shaker Road, Unit B104, Shirley, MA 01464 (800-222-3632; 978-425-0755; FAX: 978-425-4487; e-mail: oxford.inc@oxfordlasers.com; web site: www.oxfordlasers.com)

P

Pacific Scale Co., Inc., 16002 S.E. 106, P.O. Box 1606, Clackamas, OR 97015 (800-537-1886; 503-657-7500; FAX: 503-657-5561; e-mail: psco@pacifice.com; web site: www.pacificscale.com)

PAHARPUR COOLING TOWERS LTD, Paharpur House, 8/1/B Diamond Harbour Road, Kolkata, 700027 (+913340133000; FAX: +913340133499; e-mail: pcc@paharpur.com; web site: www.paharpur.com)
See our ad on page 84

Palmer Wahl Temperature Instruments, 234 Old Weaverville Road, Asheville, North Carolina 28804-1260 (800-421-2853; 828-658-3131; FAX: 828-658-0728; e-mail: info@palmerwahl.com; web site: www.palmerwahl.com)

PANalytical BV, Lelyweg 1, P.O. Box 13, Almelo, 7600 AA (31-546-534-444; FAX: 31-546-534-598; e-mail: info@panalytical.com; web site: www.panalytical.com)

PARATHERM CORP., 31 Portland Rd, Conshohocken, Pennsylvania 19428 (800-222-3611 (US, CAN, Caribbean); 610-941-4900; FAX: 610-941-9191; e-mail: info@paratherm.com; web site: www.paratherm.com)

Parker Hannifin Corp., Parker Fluid Control Division, 95 Edgewood Ave., New Britain, CT 06051 (800-Valve05; 860-827-2300; FAX: 860-827-2384; e-mail: skinner-valve@parker.com; web site: www.parker.com/fcd)

Parker Hannifin O-Ring Division, 2360 Palumbo Drive, Lexington, KY 40509 ((859) 269-2351; FAX: (859) 335-5123; e-mail: ordmailbox@parker.com; web site: www.parker.com/orings)

Parsec, Inc., 180 North Riverview, No. 300, Anahem, CA 92808 (714-996-5302; FAX: 714-996-1845; e-mail: info@parsec-corp.com; web site: www.parsec-corp.com)

Particle Reduction Service, 65 Scott St., Elk Grove Village, IL 60007 (847-593-2025; FAX: 847-593-2046; e-mail: particleclreduction@att.net)

Patterson Ind. Canada, of All-Weld Company Limited, 49 Passmore Ave., Scarborough, M1V 4T1 (800-336-1110; 416-694-3381; FAX: 416-691-2768; e-mail: process@pattersonindustries.com; web site: www.pattersonindustries.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)
See our ad on page 24

PBM Valves Inc., 1070 Sandy Hill Rd., Irwin, PA 15642 (800-967-4726; 724-863-0550; FAX: 724-864-9255; e-mail: info@pbmvalve.com; web site: www.pbmvalve.com)

PCA GmbH, Lebacher Strasse 60, Building 60, Heusweiler 66265 (49 6806 603730; FAX: 49 6806 603731; e-mail: s.mueller_z@pca-gmbh.com; web site: www.pca-gmbh.com)

PDC Machines, Inc., Warwick Commons, 1875 Stout Dr., P.O. Box 2733, Warminster, PA 18974 (215-443-9442; FAX: 215-443-8530; e-mail: info@pdcmachines.com; web site: www.pdcmachines.com)

PDR-Separations LLC, 3 Old Meadow Way, Palm Beach Gardens, FL 33418 (561 818-8445; FAX: 561 429-4541; e-mail: info@pdr-separations.com; web site: www.pdr-separations.com)

PENTA Engineering, P.A., 13835 S. Lakes Dr., Charlotte, NC 28273-6738 (704-588-8877; FAX: 704-588-9006; e-mail: scommisso@pentaengr.com; web site: www.pentaengr.com)

Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)

PerMix Tec. Co. Ltd, P.O. Box 240 1794000 (e-mail: sruga@permixtec.com)

Petron Plus Global, Inc., PO Box 644, Hutchinson, Kansas 67504-0644 (620-663-8559; e-mail: gary.clark@ppxfor-mula7.com; web site: www.petronplusglobal.com)

Pfaltz & Bauer, Inc., 172 E. Aurora St., Waterbury, CT 06708 (800-225-5172; 203-574-0075; FAX: 203-574-3181; e-mail: sales@pfaltzandbauer.com; web site: www.pfaltzandbauer.com)

PFEIFFER VACUUM GMBH, Berliner Strasse 43, Asslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)
See our ad on page 27

Pfeiffer Vacuum, Inc., 24 Trafalgar Square, Nashua, NH 03063 (800-248-8254; 603-578-6500; FAX: 603-578-6550; e-mail: contact@pfeiffer-vacuum.com; web site: www.pfeiffer-vacuum.com)

Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-3015; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)

PHOENIX Conveyor Belt Systems GmbH, Hannoversche Strasse 88, Hamburg 21079 (+49 40 7667 -03; FAX: +49 40 7667 2413; e-mail: info@phoenix-cbs.com; web site: www.phoenix-conveyor-belts.com)

Pick Heaters Inc., 730 S. Indiana Ave., P.O. Box 516, West Bend, WI 53095 (800-233-9030; 262-338-1191; FAX: 262-338-8489; e-mail: info1@pickheaters.com; web site: www.pickheaters.com)

PJSC "CONCERN STIROL"
P-Ker Engineering, 1880 Waterport Rd., PO Box 26, Waterport, NY 14571 (716-845-6398; FAX: 716-845-6479; e-mail: info@pkerengineering.com; web site: www.pkerengineering.com)

Pneumatech, Inc., 1800 Overview Dr, Rock Hill, SC 29730 (800-336-2285; 262-658-4300; FAX: 803-817-7211; e-mail: Jon.Sanders@pneumatech.com; web site: www.pneumatech.com)

PNR AMERICA, LLC, One Civic Center Plaza, Suite 303, Poughkeepsie, NY 12601 (845-483-7730; FAX: 845-483-7755; e-mail: info@pnramerica.com; web site: www.pnramerica.com)

Pollution Control Systems, Inc., 5827 Happy Hollow Rd., Suite 1B, Millford, OH 45150-1839 (513-831-1165; FAX: 513-965-4812; e-mail: polconsys@aol.com; web site: www.pollutioncontrolsystem.com)

Polyguard Products, Inc., P.O. Box 755, Ennis, TX 75120-0755 (800-541-4994; 972-875-8421; FAX: 972-875-9425; e-mail: polyguard@polyguardproducts.com; web site: www.polyguardproducts.com)

PolyScience, 6600 W. Touhy Ave., Niles, IL 60714 (800-229-7569; 847-647-0611; FAX: 847-647-1155; e-mail: sales@polyscience.com; web site: www.polyscience.com)

Polytec, Inc., Process Analytics, East Coast Office, 25 South Street, Suite A, Hopkinton 01748 ((508) 417-1035; FAX: (508) 281-4725; e-mail: analytics@polytec.com; web site: www.analytics-online.com)

Pompretavaini SPA, via per Turbigo 4, Castano Primo, 20022 (+39 0331 889 000; FAX: +39 0331 889 057; e-mail: sales@pompretavaini.it; web site: www.pompretavaini.it)
See our ad on page 13

Pope Scientific, Inc., P.O. Box 80018, 510 N. Dekora Woods Blvd., Saukville, Wisconsin 53080 (262-268-9300; FAX: 262-268-9400; e-mail: info@popeinc.com; web site: www.popeinc.com)

Porvair Filtration Group Inc, 10190 Maple Leaf Court, Ashland, VA 23005 (804 550 1600; FAX: 804 550 3262; e-mail: info@porvairfiltration.com; web site: www.porvairfiltration.com)

Posi-late, 1125 Willow Lake Blvd., St. Paul, MN 55110-5193 (651-484-5800; FAX: 651-484-7015; e-mail: info@posiflate.com; web site: www.posiflate.com)

Powder Systems Ltd, Estuary Business Park, Liverpool L24 8RG (+44 151 448 7700; FAX: +44 151 448 7702; e-mail: info@powdersystems.com; web site: www.powdersystems.com)

PP PUBLICO Publications, Jülienstr. 49, Essen, NRW D-45130 (49-201-79-12-12; FAX: 49-201-79-88-278; e-mail: pp-publico@online.de; web site: www.pp-publico.de)

PQ Systems, 210B E Spring Valley Rd, Dayton, Ohio 45458 (8007773020; 9378134700; FAX: 9378134701; e-mail: sales@pqsystms.com; web site: www.pqsystms.com)

PRAJ INDUSTRIES LIMITED, Praj Tower* 274 & 275, Bhumkar Chowk-Hinjewadi Road, Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

Prater-Sterling, 2 Sammons Court, Bollingbrook, IL 60440 (800-323-5735; 630-759-9595; FAX: 630-759-6099; e-mail: info@prater-sterling.com; web site: www.prater-sterling.com)

Presto Lifts Inc., 50 Commerce Way, Norton, MA 02766 (800-343-9322; 508-222-0177; FAX: 508-222-2996; e-mail: sales@prestolifts.com; web site: www.prestolifts.com)

Primer Technology, 2 Carlson Parkway North, Plymouth, Minnesota 55447 ((763) 475-6676; FAX: (763) 475-6677; e-mail: sales@primera.com; web site: www.primera.com)

Procedyne Corp., 11 Industrial Dr., New Brunswick, NJ 08901 (732-249-8347; FAX: 732-249-7220; e-mail: mail@procedyne.com; web site: www.procedyne.com)

Process Combustion Corp., 5460 Horning Rd., Pittsborough, PA 15236 (412-655-0955; FAX: 412-655-0961; e-mail: pcc@pcc-sterling.com; web site: www.pcc-sterling.com)



PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Process Engineering Associates is an applied Chemical Engineering company. Services include plant design, new process design, existing process scale-up, process modeling/simulation, operations support, process troubleshooting, process optimization, and process safety.

International, Gulf Coast Regional Office, 25353 Friendship Road, Suite B, Daphne, AL 36526 ((251) 709-6730)
International, Pacific Coast Regional Office, 1933 Jadin Avenue, Suite 225, Richland, Washington 99354 ((509) 430-5328)

PA, Eastern Regional Office, 329 East Second Street, Boyertown 19512 ((610) 369-2747; FAX: (610) 220-8729)
TN, Process Engineering International, LLC, 700 South Illinois Ave., Suite A-201, Oak Ridge 37830 ((865) 220-8722; FAX: (865) 220-8729)

Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, 636 Prospect St., Westfield, New Jersey 07090 (908)9673807; e-mail: pse@prosyseng.com; web site: www.prosyseng.com)

Process Systems Enterprise, Inc, 3 Wing Drive, Suite 103, New Jersey 07927 (e-mail: j.wade@psenterprise.com)
Process Systems Enterprise Limited, 5th Floor, East 26, 28 Hamersmith Grove, London W6 5HA (44-20-8563-0888; FAX: 44-20-8563-0999; e-mail: info@psenterprise.com; web site: www.psenterprise.com)

PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205, P.O. Box 590, Stockton, California 95201-0590 (800-344-3246 USA & Canada; 209-943-6088; FAX: 209-943-0242; e-mail: sales@procoproducts.com; web site: www.procoproducts.com)

Progressive Recovery Inc., 700 Industrial Dr., Dupo, IL 62239-0126 (800-732-3793; 618-286-5000; FAX: 618-286-5009; e-mail: sales@progressive-recovery.com; web site: www.progressive-recovery.com)

ProSim SA, Immeuble Strategie A, 51, rue Ampere, LABEGE 31670 (+33(0)5 62 88 24 30; FAX: +33 (0)5 62 88 24 39; e-mail: info@prosim.net; web site: www.prosim.net)

ProSonic LLC, P.O. Box 26676, Milwaukee, WI 53226 (800-849-1130 North America; 800-849-1130, FAX: 414-755-7177; e-mail: info@pro-sonic.com; web site: www.pro-sonic.com)

ProSys, Inc., 2822 O. AdNeal Lane Bldg A, Baton Rouge, Louisiana 70816 (225-291-9591; FAX: 225-291-9594; e-mail: sales@prosys.com; web site: www.prosys.com)

PRV/UTECHNIK Dieter Busch AG, Oskar-Messer-Str. 19-21, Ismaning, 85737 (89-99616-0; FAX: 89-99616-200; e-mail: info@prvtechnik.com; web site: www.prvtechnik.com)

PSL USA, Cliffside Research Park, 3944 North Mountain View Drive. STE. 100, Boise, ID 83704 (208 376 7008; FAX: 208-378-7008; e-mail: pslus@powdersystems.com; web site: www.powdersystems.com)

Psychsoft, Rte 53, Quincy, MA 02171 (617-417-8733; e-mail: sales@psychsoft.com; web site: www.psychsoft.com)

Pulsair Systems, Inc., Office 13643 NE 126th Place, Kirkland, WA 98034-8705, Mail PO Box 562 Bellevue, WA 98009-0562, Bellevue, Washington 98009 (800-582-7797 North America; 425-455-1263; FAX: 425-451-7312; e-mail: sales@pulsair.com; web site: www.pulsair.com)

Pump Solutions Group, 2206N Van Buren Street, Grand Terrace, California 92313 (909) 422-1739; FAX: (909) 512-1209; e-mail: info@psgdover.com; web site: www.pumpsg.com)

PureAire Monitoring Systems, Inc., 557 Capital Dr., Lake Zurich, IL 60047-6711 (888-788-8050 USA & Canada; 847-726-6000; FAX: 847-726-6051; e-mail: info@pureaire.net; web site: www.pureairemonitoring.com)

Q

Q-Lab Corporation, 800 Canterbury Rd., Westlake, Ohio 44145 (+1-440-835-8700; FAX: +1-440-835-8738; e-mail: info@q-lab.com; web site: www.q-lab.com)

Qosina, 150-Q Executive Dr., Edgewood, NY 11717-8329 (631-242-3000; FAX: 631-242-3230; e-mail: info@qosina.com; web site: www.qosina.com)

Quadro Engineering Corp., 613 Colby Drive, WATERLOO, NZV 1A1 (519-884-9660; FAX: 519-884-0253; e-mail: quadrosales@idexcorp.com; web site: www.quadro.com)

Quality America, Inc., PO Box 30591, Tucson, AZ 85751 (800-722-6154 US; 520-722-6154; FAX: 520-722-6705; e-mail: sales@qualityamerica.com; web site: www.qualityamerica.com)

QUEST INTEGRITY, 19823 58th Place South, Washington 98032 (e-mail: c.levy@questintegrity.com)

R

Radleys, Radleys CB11 3AZ (e-mail: marketing@radleys.co.uk) RAS Process Equipment Inc., 324 Meadowbrook Rd., Robbinsville, NJ 08891 (609-371-1000; FAX: 609-371-1200; e-mail: sales@ras-inc.com; web site: www.ras-inc.com)

Raytek Corp., 1201 Shaffer Rd., Bldg. #2, Santa Cruz, CA 95060 (800-227-8074; 831-458-3900; FAX: 831-458-1497; e-mail: solutions@raytek.com; web site: www.raytek.com)

Raytek GmbH, Blankenburger Str. 135, Berlin 13127 (+49304780080; FAX: +49304710251; e-mail: raytek@raytek.de; web site: www.ircon.de)

Red Dog Services LLC, 207 West Main Street, Allen, TX 75013 (214.707.5809; e-mail: tom@reddogservices.com; web site: www.reddogservices.com)

REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)

See our ad on page 17
Red Seal Measurement, 1310 Emerald Rd., Greenwood, SC 29646 (800-833-3357; 864-223-1212; FAX: 800-833-6971; e-mail: support@redsealmeasurement.com; web site: www.redsealmeasurement.com)

Regal Industries, Inc., 857 Richmond Rd, Painesville, OH 44077 (888-910-9400; 440-352-9600; FAX: 440-352-9682; e-mail: regalindus@sbcglobal.net; web site: www.regal-industries.com)

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)

See our ad on page 19
REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)

RF Valves, Inc., 1342 Charwood Road, Hanover, MD 21076 (410-850-4404; FAX: 410-850-4464; e-mail: rfvalves@rfvalve.com; web site: www.rfvalve.com)

Richman Chemical, 768 North Bethlehem Pike, Ste 204, Lower Gwynedd, PA 19002 ((215) 628-2946; e-mail: d@richman-chemical.com; web site: www.richmanchemical.com)

Richter Chemie-Technik GmbH, Otto-Schott-Str. 2, P.O. Box 100609, Kempfen 47906 (+49-2152-146-0; FAX: +49-2152-146-190; e-mail: richter-info@dexcorp.com; web site: www.richter-ct.com)

River Consulting, One Robinson Plaza, Suite 400, Pittsburgh, Pennsylvania 15202 (412.471.5900; FAX: 412.722.1681; web site: riverconsulting.com)

RKI Instruments, Inc., 33248 Central Avenue, Union City, CA 94587-2010 (800-754-5165; 510 441-5656; FAX: 510 441-5650; e-mail: orders@rkinstruments.com)

Rockwell Automation, Inc., 1201 South Second Street, Milwaukee, WI 53204-2496 (414-382-2000; 800-223-5354; FAX: 414-382-4444; e-mail: webmaster@rockwellautomation.com; web site: www.rockwellautomation.com)

Rockwell Software Brand, Rockwell Automation, Inc., 1201 South Second Street, Milwaukee, Wisconsin 53204-2496 (800-223-5354; 414-382-2000; FAX: 414-382-4444; e-mail: webmaster@rockwellautomation.com; web site: www.rockwellautomation.com)

Roth Pump, P.O. Box 4330, Rock Island, Illinois 61204 (1-888-444-ROTH; 1-309-787-1791; FAX: 1-309-787-5142; e-mail: roth.pump@rothpump.com; web site: www.rothpump.com)

Roto-Disc, 514 Enterprise Dr., Unit A, Erlanger, KY 41017 (513-871-2600; FAX: 513-871-9013; e-mail: info@rotodisc.com; web site: www.rotodisc.com)

RPS Engineering, Inc., 1300 Crispin Drive, PO Box 5186, Elgin, IL 60123 (800-931-1950 USA/canada; 847-931-1950; FAX: 847-931-4274; e-mail: rpstanis@rpsengineering.com; web site: www.rpsengineering.com)

R. STAHL, Am Bahnhof 30, Waldenburg 74638 (+49 (0) 7942-943-0; FAX: +49 (0) 7942-943-4333; e-mail: info@stahl.de; web site: www.stahl.de)

Rupture Pin Technology, 8230 SW 8th Street, Oklahoma City, OK 73128 (405-789-1884; FAX: 405-789-1942; e-mail: sales@rupturepin.com; web site: www.rupturepin.com)

Russelectric, Inc., South Shore Park, Hingham, MA 02043-4387 (800-225-5250; 781-749-6000; FAX: 781-749-4205; e-mail: info@russelectric.com; web site: www.russelectric.com)

RVT Process Equipment, Inc., 9047 Executive Park Drive, Suite 222, Knoxville, TN 37923 (865) 694-2089; FAX: (865) 560-3115; e-mail: info@rvtpe.net; web site: www.rvtpe.net)

S

Sahyadri Engineering Corporation, 7, Diamond Industrial Estate, Opp. Virwani Industrial Estate, Near Western Express Highway, Goregaon (East), Mumbai - 400 063., W-142, 70 Bungalov, Tarapur Industrial Area, Tarapur - 401 506. 400063 (e-mail: info@sahyadriengcorp.com)

SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS, 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com; web site: www.hexoloy.com)

See our ad on page 167
Samco Technologies Inc., One River Rock Drive, Buffalo, New York 14207 ((716) 743-9000; FAX: (716) 743-1220; e-mail: sales@samcotech.com; web site: www.samcotech.com)

SAMSON Controls, Inc., 4111 Cedar Blvd., Baytown, Texas 77523-5888 (281-383-3677; FAX: 281-383-3690; e-mail: samson@samson-usa.com; web site: www.samson-usa.com)

Samuel Pressure Vessel Group, 2121 Cleveland Ave, Marinette, WI 54143 (800-247-8265; fax: 930418; FAX: 715-735-5488; e-mail: spvg@samuel.com; web site: www.samuelpressurevesselgroup.com)

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 760-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

See our ad on page 45
SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

Sauereisen, 160 Gamma Dr., Pittsburgh, PA 15238-2989 (412-963-0303; FAX: 412-963-7620; e-mail: questions@sauereisen.com; web site: www.sauereisen.com)

SAWA Pumpentechnik AG, Taastrasse 40, Degersheim, CH-9113 (+41 71 372 08 08; FAX: +41 71 372 08 09; e-mail: info@sawa.ch; web site: www.sawa.ch)

S&C Electric Company, 6601 N. Ridge Blvd., Chicago, IL 60626-3997 (773-338-1000; FAX: 773-338-5102; e-mail: steven.strand@sandc.com; web site: www.sandc.com)

Scenic Process Element Inc., No. 5, Shin-Jhan Rd., Chian-Jhen District., Kaohsiung City 80672 ((886-7)811-1359; ext.: 220; FAX: (886-7)822-1033; e-mail: scenic@scenic-seals.com; web site: www.scenic-seals.com)

Schenck Process, 7901 NW 107th Terence, Kansas City, MO 64153 (888-657-3904; 816-891-8336; e-mail: mktg@schcnkprocess.com; web site: www.macprocessinc.com)

Schenck Process GmbH, Pallaswiesenstr. 100, Darmstadt 64293 (0049 (0) 6151 1531-0; FAX: 0049 (0) 6151 1531-6; e-mail: info@schcnkprocess.com; web site: www.schcnkprocess.com)

Schurter, Inc., 447 Aviation Blvd., Santa Rosa, CA 95403 ((707) 636-3000; FAX: (707) 636-3033; e-mail: info@schurterinc.com; web site: www.schurterinc.com)

Schutte & Koerling, 2510 Metropolitan Drive, Trevose, PA 19053 (800-752-8558; 215-639-0900; FAX: 215-639-1597; e-mail: sales@s-k.com; web site: www.s-k.com)

Schutte & Koerling, 2510 Metropolitan Drive, Trevose, PA 19053 (800-752-8558; 215-639-0900; FAX: 215-639-1597; e-mail: sales@s-k.com; web site: www.s-k.com)

Schutte & Koerling, 2510 Metropolitan Drive, Trevose, PA 19053 (800-752-8558; 215-639-0900; FAX: 215-639-1597; e-mail: sales@s-k.com; web site: www.s-k.com)

Schutte & Koerling, 2510 Metropolitan Drive, Trevose, PA 19053 (800-752-8558; 215-639-0900; FAX: 215-639-1597; e-mail: sales@s-k.com; web site: www.s-k.com)

Scientific Dust Collectors, 4101 W. 126th St., Alsip, IL 60803-1901 (708-597-7090; FAX: 708-597-0313; e-mail: scientificcollectors@scientificdust.com; web site: www.scientificdustcollectors.com)

Security Engineered Machinery, P.O. Box 1045, Westbrook, MA 01581 (800-225-9293; 508-366-1488; FAX: 508-366-6814; e-mail: info@senshred.com; web site: www.senshred.com)

seepex GmbH, Scharnhoeelzstr. 344, Bottrop D-46240 (+49.2041.996-0; FAX: +49.2041.996-400; e-mail: info@seepex.com; web site: www.seepex.com)

seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

Sefar Inc., 111 Calumet St., Buffalo, New York 14043 (800-995-0531; 800-995-0531; FAX: 716-683-4053; e-mail: sales@sefar.us; web site: www.sefar.us)

Sensor Electronics Corp., 5500 Lincoln Dr., Minneapolis, MN 55436 (800-285-3651; 952-938-9486; FAX: 952-938-9617; e-mail: sales@sensorelectronic.com; web site: www.sensorelectronic.com)

Sensor Electronics Corporation, 12730 Creek View Avenue, Savage, MN 55378 (800-285-3651; 952-938-9486; FAX: 952-938-9617; e-mail: sales@sensorelectronic.com; web site: www.sensorelectronic.com)

Sensor Technology Ltd, Apollo Park, Ironstone Lane, Wroxton, Banbury OX15 6AY (44 1869 238400; FAX: 44 1869 238401; e-mail: info@sensors.co.uk; web site: www.sensors.co.uk)

SensoTech GmbH, Steinfeldstr. 1, Magdeburg-Barleben, 39179 (+49 39203 514 100; FAX: +49 39203 514 109; e-mail: info@sensotech.com; web site: www.sensotech.com)

SensoTech Inc., 1341 Hamburg Turnpike, Suite 2-3, Wayne, New Jersey 07093 (973 832 4575; FAX: 973 832 4576; e-mail: sales-usa@sensotech.com; web site: www.sensotech.com)

Sentry Equipment Corp, 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Sera ComPress GmbH, sera-Str. 1, Immenhausen, 34376 (+49 (0)5673 999-04; FAX: +49 (0)5673 999-05; e-mail: info-compress@sera-web.com; web site: www.sera-web.com/en/compressor-technology)

Sera ProDos GmbH, sera-Str. 1, Immenhausen, D-34376 (+49 (0)5673 999-02; FAX: +49 (0)5673 999-03; e-mail: info-prodos@sera-web.com; web site: www.sera-web.com/en/dosing-technology)

SGB GmbH, Hofstr. 10, Siegen 57076 (+49 271 48964-0; FAX: +49 271 48964-6; e-mail: sgb@sgb.de; web site: www.sgb.de)

Sharpex Filters (I) Pvt. Ltd., Sales, R-664, Rabale MIDC., Rabale, Navimumbai 400086 (91-22-27696339; 912227696322; FAX: 91-22-27696325; e-mail: sharpex@vsnl.com; web site: www.sharpex.com)

Shimadzu Scientific Instruments, 7102 Riverwood Dr., Columbia, MD 21046 (800-477-1227; 410-381-1227; FAX: 410-381-1222; e-mail: webmaster@shimadzu.com; web site: www.ssi.shimadzu.com)

Shimadzu Scientific Instruments, 7102 Riverwood Dr., Columbia, MD 21046 (800-477-1227; 410-381-1227; FAX: 410-381-1222; e-mail: webmaster@shimadzu.com; web site: www.ssi.shimadzu.com)

Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, 407, Shivam Chambers., S V Road, Goregaon West., Mumbai 400104 (9870646500; 9821633589; FAX: 912226798284; e-mail: sales@shivshaktiequipments.com; web site: www.shivshaktiequipments.com)

SIAD Macchine Impianti, Via Canovine, 2/4, Bergamo 24126 (0039 035 327611; FAX: 0039 035 316131; e-mail: siadm@siad.eu; web site: www.siadmi.com)

Sias, Churchmans Center, 11A Parkway Circle, New Castle, DE 19720 (302-326-0433; FAX: 302-326-0492; e-mail: info@sias.biz; web site: www.sias.biz)

Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187 (+49(0)721/595-4706; web site: www.siemens.com)

Siemens Industry, Inc., Applied Automation, 408 U.S. Highway 60, Bartlesville, OK 74003 (800-241-4453; 918-662-7000; FAX: 918-662-7052; e-mail: helpline.sii@sea.siemens.com; web site: www.usa.siemens.com/industry)

Siemens Industry, Inc., Process Instrumentation & Analytics, 1201 Sunnynoyon Pike, Spring House, PA 19477 (800-241-4453; 215-646-7400; e-mail: helpline.sii@siemens.com; web site: www.usa.siemens.com/industry)

Siemens Process Industries and Drives, 3333 Old Milton Parkway, Alpharetta, Georgia 30005-4437 (800-241-4453; 770-751-2000; FAX: 678-297-8316; e-mail: helpline.sii@siemens.com; web site: www.usa.siemens.com/industry)

Siemens Process Industries and Drives, 5300 Triangle Pkwy., Norcross, Georgia 30092 (770-871-3800 800-241-4453; 770-871-3968; FAX: 770-871-3999; e-mail: helpline.sii@siemens.com; web site: www.usa.siemens.com/industry)

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Sierra Monitor Corp., 1991 Tarob Ct., Milpitas, CA 95035 (800-727-4377; 408-262-6611; FAX: 408-262-9042; e-mail: sales@sierramonitor.com; web site: www.sierramonitor.com)

Sigma Thermal Inc., 4875 Deen Road, Marietta, Georgia 30066 (7704275770; FAX: 6782541762; e-mail: sales@sigmathermal.com; web site: www.sigmathermal.com)

Sigrist Photometer AG, Hofurlistr. 1, Ennetbürgen 6373 (41-41-624-5454; FAX: 41-41-624-5455; e-mail: info@photometer.com; web site: www.photometer.com)

Singleton Corp., 3280 W. 67th Place, Cleveland, OH 44102 (216-651-7800; FAX: 216-651-4247; e-mail: info@singletoncorp.com; web site: www.singletoncorp.com)

Solutia Inc., A subsidiary of Eastman Chemical Co., 575 Maryville Centre Dr., St. Louis, MO 63141 (800-426-2463; (314) 674-1000; 800-433-6997; FAX: (314) 674-7433; e-mail: team.therminol@eastman.com; web site: www.therminol.com)

Southworth Products Corp., P.O. Box 1380, Portland, ME 04104-1380 (800-743-1000; 207-878-0700; FAX: 207-797-4734; e-mail: salesinfo@southworthproducts.com; web site: www.southworthproducts.com)

Spaltech International Inc., 37 Charles Street, Halton Hills, L7G 2Z4 (905-877-2771; e-mail: info@spaltech.com; web site: www.spaltech.com)

Spartan Chemical Services Inc., P.O. Box 4207, Jersey City, NJ 07304-0207 (917-975-2268; FAX: 845-583-8062; e-mail: spartan@scs.com; web site: www.spartanchemical.com)

Spee Dee Packaging Machinery, 1360 Grandview Parkway, Sturtevant, WI 53177 (877-375-2121; 262-886-4402; FAX: 262-886-5502; e-mail: info@spee-dee.com; web site: www.spee-dee.com)

Spee-Dee Packaging Machinery, Inc., 1360 Grandview Parkway, Wisconsin 53177 (e-mail: tjohnson@spee-dee.com)

Spencer Strainer Systems, 6205 Ghensins Mill Rd., Jeffersonville, IN 47130 (800-801-4977; 812-282-6300; FAX: 812-282-7272; e-mail: spencer256@aol.com; web site: www.spencerstrainer.com)

Spill Containment Direct, 208 Capital Dr., Buffalo, NY 55313 (7637623453; 7637623453; e-mail: sales@spillcontainmentdirect.com)

Sporian Microsystems, Inc., 515 Courtney Way - Suite B, Lafayette, CO 80026 (303-516-9075 X 19; e-mail: info@sporian.com; web site: www.sporian.com)

Spray Drying Systems, Inc., 5320 Enterprise Street Suite J, Eldersburg, MD 21784 (410-549-8090; FAX: 410-549-8091; e-mail: sales@spraydrysys.com; web site: www.spraydrysys.com)

Spraying Systems Co., North Ave. at Schmale Rd., Wheaton, IL 60187-7901 (800-957-7729; 630-665-5000; FAX: 630-260-9727; e-mail: info@spraying.com; web site: www.spraying.com)

S-Products Inc., 141 Kings Highway E., Fairfield, CT 06825 (203-331-9546; FAX: 203-335-2723; e-mail: s-products@usa.net; web site: www.s-products.com)

SPX Cooling Technologies, 7401 W 129 St., Overland Park, KS 66213 (913-664-7400; FAX: 913-664-7439; e-mail: spxcooling@spx.com; web site: spxcooling.com)

SPX Flow Technology, 4647 S.W. 40th Ave., Ocala, FL 34474 (352-237-1220; FAX: 352-873-5770; e-mail: pneumatic.sales.com; web site: www.pneumaticproducts.com)

SRS Crisafulli, Inc., 1610 Crisafulli Dr., PO Box 1051, Glen-Dive, MT 59330-1051 (800-442-7867; 406-366-3393; FAX: 406-366-8088; e-mail: srs@crisafulli.com; web site: www.crisafullipumps.com)

Staplex Co., Air Sampler Div., 777 Fifth Ave., Brooklyn, NY 11232-1626 (800-221-0822 (Not NYC); 718-768-3333; FAX: 718-965-0750; e-mail: info@staplex.com; web site: www.staplex.com)

StatPoint Technologies Inc., 560 Broadview Avenue, Suite 2014, Warrenton, VA 20186 (800-232-7828; 540-428-0084; FAX: 540-428-0089; e-mail: info@statpoint.com; web site: www.statgraphics.com)

Stedman, 129 Franklin Ave., Aurora, IL 47001 (800-262-5401; 812-926-0038; FAX: 812-926-3482; e-mail: sales@stedman-machine.com; web site: www.stedman-machine.com)

Steri Technologies Inc., 857 Lincoln Ave., Bohemia, NY 11716 (800-253-7140; 631-563-8300; FAX: 631-563-8378; e-mail: sti@steri.com; web site: www.steri.com)

Strobic Air, a CECO Environmental Company, 700 Emlen Way, Telford, Pennsylvania 18969 (800-722-3267; 715-723-4700; FAX: 215-723-7401; e-mail: tristack@strobic-air.com; web site: www.strobicair.com)

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

International, Sulzer Chemtech Pvt. Ltd., 10 Benoi Sector, Singapore 629485 (+65 6515 5500; FAX: +65 6862 7563)

OK, Sulzer Chemtech USA, Inc., 1 Sulzer Way, Tulsa 74107 (918 446 6672; FAX: 918 446 5321)

International, Sulzer Chemtech, 19F Hong Jia Tower, No. 388 Fushan Road, Pudong New District, Shanghai 200 122 (+86 21 6036 5100; FAX: 86 21 6036 5100 100)

Sulzer Chemtech USA, Inc., 1 Sulzer Way, Tulsa, OK 74107 (918 446 6672; FAX: 918 446 5321; e-mail: rodney.alario@sulzer.com; web site: www.sulzer.com)

Summit Industrial Products, P.O. Box 131359, Tyler, TX 75713 (1-800-749-5823; 903.534.8021; e-mail: TonyD@klsummit.com; web site: www.klsummit.com/www.sublimedescaler.com)

Sumter Transport Company, 170 S Lafayette Dr, Sumter, SC 29150 (803-775-1002; FAX: (803) 778-0118; e-mail: rfamilia@sumtertransport.com; web site: www.sumtertransport.com)

Supercritical Fluid Technologies, Inc., One Innovation Way, Delaware 19711 (e-mail: ken.krenwon@supercriticalfluids.com)

Sur-Loc Inc., 501 E. Swager Dr., P.O. Box 750, Fremont, IN 46737 (800-223-7517; 260-495-4065; FAX: 260-495-4205; e-mail: sales@swager.com; web site: www.surloc.com)

Swagelok Co., 31500 Aurora Rd., Solon, OH 44139-2764 (440-349-5934; FAX: 440-349-5843; e-mail: publicrelations@swagelok.com; web site: www.swagelok.com)

Swager Communications, 501 E. Swager Dr., PO Box 656, Fremont, IN 46737 (800-968-5601; 260-495-2515; FAX: 800-882-3414; e-mail: sales@swager.com; web site: www.swager.com)

Sweet Manufacturing Company, P.O. Box 1086, 2000 E. Leffel Lane, Springfield, OH 45501 (800-334-7254; 937-325-1511; FAX: 937-322-1963; e-mail: sales@sweetmfg.com; web site: www.sweetmfg.com)

Symmetric Research, 9101 W Sahara Ave Ste 105 PMB 209, Las Vegas, NV 89117 (702-341-9325; e-mail: info@symres.com; web site: www.symres.com)

Sympatec GmbH, System | Partikel | Technik, Am Pulverhaus 1, Clausthal-Zellerfeld 38678 (+49 5323 717 0 ; FAX: +49 5323 717 229; e-mail: sales@sympatec.com ; web site: www.sympatec.com)

Sympatec, Inc., System | Partikel | Technik, 1600, Reed Rd., Suite C, Pennington, NJ 08534 (609-303-0066; FAX: 609-303-0365; e-mail: usa@sympatec.com; web site: www.sympatec.com)

SYN-TEX, 102 E Peck Blvd, Lafayette, LA Synthetic Surfaces Inc., P.O. Box 241, Scotch Plains, NJ 07076 (908-233-6803; FAX: 908-233-6844; e-mail: info@nordot.com; web site: www.nordot.com)

Systech Instruments Ltd (Systech Illinois), 17 Thame Park Business Centre, Wenman Road, Thame OX9 3XA (+44 (0) 1844 216838; FAX: +44 (0) 1844 217220; e-mail: sales.uk@systechillinois.com; web site: www.systechillinois.com)

T

TankLink, a wholly-owned subsidiary of Tetelur Corporation, 311 S Wacker Drive #4300, Chicago, IL 60606 (800) 835-8527; FAX: (312) 379-8310; e-mail: pbarron@telular.com; web site: www.TankLink.com)

Tapflo Group, 12464 Odette-Oligny H4J 2R4 (e-mail: elk-taibi@tapflo.com)

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

Team Industries, Inc., 1200 Maloney Rd., P.O. Box 350, Kaukauna, WI 54130 (800-819-9353 (Nationwide); 920-766-7977; FAX: 920-766-0486; e-mail: jkreisle@teamind.com; web site: www.teamind.com)

tecUSA, 80 Skyline Dr., Plainville, NY 11803 (516-653-2000; FAX: 516-939-0555; e-mail: info@tecusa.com; web site: www.tecusa.com)

TECAM GROUP, Horts d'en Mateu, 26 08450 (e-mail: info@tecampgroup.com)

Technical Database Services, Inc. (TDS), Planetarium Station, P.O. Box 45, New York, NY 10024-1755 (646-669-8900; FAX: 646-669-7478; e-mail: info@tds-tds.com; web site: www.tds-tds.com)

Technical Glass Products, 881 Callendar Blvd, Painesville, OH 44077 (440-639-6399; FAX: 440-639-1292; e-mail: tgp@tgpohio.com; web site: www.technicalglass.com)

Teikoku USA, Inc., 959 Means Road, Warmistern, Pennsylvania 18974 (215-343-6000; e-mail: info@TeikokuPumps.com; web site: www.TeikokuPumps.com)

Tel-Tru Manufacturing Co., 408 St. Paul St., Rochester, NY 14605 (800-232-5335; 585-232-1440; 585 295-0235; FAX: 585-232-3857; e-mail: info@teltru.com; web site: www.teltru.com)

Tema Systems, Inc., 7806 Redsky Dr., Cincinnati, OH 45249 (513-489-7811; FAX: 513-489-4817; e-mail: sales@tema.net; web site: www.tema.net)

Tempco Electric Heater Co., 607 N Central Ave., Illinois 60191 (e-mail: dennispadlo@tempco.com)

Temp-Pro Inc., 200 Industrial Dr., PO Box 89, Northampton, MA 01061-0089 (800-991-9093; 413-584-3165; FAX: 413-586-3625; e-mail: sales@temp-pro.com; web site: www.temp-pro.com)

Texas Rope Rescue, PO Box 206, Nardin, TX 78141 (855-820-3058; 361-938-7080; FAX: 866-864-4741; e-mail: info@texasropescue.com; web site: www.texasropescue.com)

Tex-Fin, Inc., 19115 Aldine Westfield, Houston, Texas 77073 (1-800-932-8471; (281) 821-7150; FAX: (281) 821-1220; e-mail: sales@tex-fin.com; web site: www.tex-fin.com)

The Industrial Controls Company, Inc., (e-mail: info@theindustrialcontrolsco.com; web site: www.theindustrialcontrolsco.com)

THE LUBRIZOL CORPORATION, 9911 Brecksville Rd., Cleveland, Ohio 44141-3247 (888-234-2436; 216-447-7397; FAX: 216-447-5700; web site: www.lubrizol.com)

See our ad on page 97

Thermal Spray Solutions, Inc., 1105 Industrial Plaza, Suite B, Chesapeake, Virginia 23323 (757-673-2468; FAX: 757-673-3128; e-mail: Info@thermalsprayusa.com; web site: www.thermalsprayusa.com/)

Thermionics Corp., 41 Hampden Rd., Mansfield, MA 02048 (800-628-4722; 781-688-2300; e-mail: sales@thermionics.com; web site: www.thermionics.com)

Thermotron, 291 Kollen Park Dr., Holland, MI 49423 (616-393-4580; FAX: 616-392-5643; e-mail: info@thermotron.com; web site: www.thermotron.com)

Thorburn Flex, 173 Oneida Drive, Pointe-Claire Quebec, (810)772-0205; web site: www.thorburnflex.com)

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Tiger Tower Services, 8774 Fawn Trail, Conroe, Texas 77385 (281-951-2500; FAX: 281-951-2520; e-mail: info@tigertowerservices.com; web site: www.tigertowerservices.com)

TIGG Corporation, 1 Willow Avenue, Oakdale, PA 15071 (800-925-0011 USA; 724-703-3020; FAX: 724-703-3020; e-mail: info@tigg.com; web site: www.tigg.com)

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8772; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

TMTS Associates, Inc., Combustion/Air Pollution Control, 399 Pavillion St., Atlanta, GA 30315-1452 (404-627-4722; e-mail: tmcgowan@mindspring.com; web site: www.tmtsassociates.com)

Toll Blender Network, 50 Willowbrook Drive, Connecticut 06410 (e-mail: djcenczo@tollblendernetwork.com)

Topog-E Gasket Co., 1224 North Ulica, Tulsa, OK 74110 (800-587-7123; 918-587-6649; FAX: 918-587-6961; e-mail: sales@topog-e.com; web site: www.topog-e.com)

Topp Industries, Inc., 420 Slate Highway 25 North, Rochester, IN 46975 (800-354-4534; 574-223-3681; FAX: 574-223-6106; e-mail: toppindustries@toppindustries.com; web site: www.toppindustries.com)

TowerScan, 834 Upper Canada Dr., Sarnia, N7W1A4 (888 724-1798; 519 344-7132; FAX: 519 336-8340; e-mail: info@towersonic.com; web site: www.towersonic.com)

TowerScan, 3560 Pine Grove Ave., Ste. 497, Port Huron, MI 48060 (888-724-1798; 888-724-1798; FAX: 281-966-6983; e-mail: info@towersonic.com; web site: www.towersonic.com)

TowerScan, 834 Upper Canada Dr., Sarnia, N7W1A4 (888 724-1798; 519 344-7132; FAX: 519 336-8340; e-mail: info@towersonic.com; web site: www.towersonic.com)

Trans Environmental Systems, Inc., 1363 Wimbledon Way, Charlottesville, Virginia 22901 (800-220-2466; 434-975-2872; e-mail: TESLproducts@gmail.com; web site: www.transenvsys.com)

Tranter Ltd., Unit 50, Monckton Rd. Industrial Estate, Wakefield WF2 7AL (44-1924-298393; FAX: 44-1924-291596; e-mail: info@se.tranter.com; web site: www.tranter.com)

TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: tredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

ts-systemfilterer gmbh, Gaensacker 9, Ahorn-Berolzeim 74744 (+49 06296880; FAX: +49 06296885; e-mail: info@ts-systemfilterer.de; web site: www.ts-systemfilterer.de)

Tuf-Lok International, P.O. Box 5078, Madison, WI 53705 (608-270-9478; FAX: 608-270-2080; e-mail: info@tuflok.com; web site: www.tuflok.com)

Turner Designs Hydrocarbon Instruments, Inc., 2023 N. Gateway Blvd., Ste. 101, Fresno, CA 93727 (559-253-1414; FAX: 559-253-1090; e-mail: medwards@oilwatermonitors.com; web site: www.oilwatermonitors.com)

Turner EnviroLogic, Inc., 1140 S.W. 34th Avenue, Deerfield Beach, FL 33442 (800-933-8385; 954-422-9787; FAX: 954-422-9723; e-mail: sales@tenviro.com; web site: www.tenviro.com)

Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

TW Metals, 760 Constitution Dr., Ste. 204, Exton, PA 19341 (800-545-5000; 610-458-1300; FAX: 610-458-1399; e-mail: sales@twmetals.com; web site: www.twmetals.com)

U

UIC Inc., 1225 Channahon Rd., P.O. Box 863, Joliet, IL 60434-0863 (800-342-5842 (Not IL); 815-744-4477; FAX: 815-744-1561; e-mail: warmstrong@uicinc.com; web site: www.uicinc.com)

Ultrachem, Inc., 900 Centerpoint Blvd, New Castle, DE 19720 (302-325-9880; FAX: 302-325-0335; e-mail: info@ultracheminc.com; web site: ultracheminc.com)



UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)

See our ad on page 62

Union Special, LLC, One Union Special Plaza, Huntley, IL 60142 (800-344-9698; 847-669-4500; FAX: 847-669-4239; e-mail: sales@unionspecial.com; web site: www.unionspecial.com)

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

United Filtration Systems, Inc., 6558 Diplomat Dr., Sterling Heights, MI 48314 (1-800-311-5561; 586-802-5561; FAX: 586-802-5562; web site: www.unitedfiltration.com)

United Manufacturing International 2000, 820 Kimball Road, Ste. 1002, Red Bluff, CA 96080 (530-528-1361; FAX: 530-528-1361; e-mail: activecarbon@jps.net; web site: uni20001.tripod.com)

United Performance Metals, 12223 F.M. 529, Houston, TX 77041 (866-588-3637; 832-243-0008; FAX: 832-243-9432; e-mail: sales@upmet.com; web site: www.upmet.com)

Universal Flow Monitors, Inc., P.O. Box 249, Hazel Park, MI 48030 (866-593-3090; 248-542-9635; FAX: 248-398-4274; e-mail: ufm@flowmeters.com; web site: www.flowmeters.com)

Universal Tank & Fabrication, 8025 Chavenelle Road, Dubuque, IA 52002 (563-556-5889; FAX: 563-556-5870; e-mail: red@universaltank.com; web site: www.universaltank.com)

URACA GmbH & Co. KG, Sirchinger Str. 15, Bad Urach, 72574 (07125-133-0; FAX: 07125-133-202; e-mail: info@uraca.de; web site: www.uraca.com)



USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Manufacturer of all sizes and alloys of tube plugs to include our mechanical Snap Itr@ Jr and Sr plugs. Also manufacturers Piping Isolation and Flow Measurement products. Phones answered 24/7.

US Underwater Services, 101 Northeast Haskew, Burleson, Texas 76028 (800) 860-2178; 817-447-7321; FAX: (817) 447-0021; web site: www.usunderwaterservices.com)

V

V2 Flow Controls, 1333 Burr Ridge Parkway Suite 200, Burr Ridge, Illinois 60527 ((630)962-6870; web site: www.v2flowcontrols.com)

VanDeMark Chemical Inc., One North Transit Road, Lockport, NY 14094 (800-836-8253; 716-433-6764; FAX: 716-433-2850; e-mail: sales@vdmchemical.com; web site: www.vdmchemical.com)

Van London-pHoenix Co., 6103 Glenmont Drive, Houston, TX 77081 (800-522-7920; 713-772-6641; FAX: 713-772-4671; e-mail: info@VL-PC.com; web site: www.VL-PC.com)

VDM Metals GmbH, Plattenberger Str. 2, P.O. Box 1820, Werdohl, NRW D-58778 (49-2392-55-0; FAX: 49-2392-55-2217; e-mail: vdm@vdm-metals.com; web site: www.vdm-metals.com)

Vector Technologies Ltd., 6820 N. 43rd St., Milwaukee, WI 53209 (800-832-4010; 414-247-7100; FAX: 414-247-7110; e-mail: sales@vector-vacuums.com; web site: www.vector-vacuums.com)

VEGA Americas, Inc., 4170 Rosslyn Drive, Cincinnati, OH 45209 (513 2720131; FAX: 513 2720133; e-mail: americas@vega.com; web site: www.vega-americas.com)

VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)

See our ad on page 111

International, Controlnager Consulting Engineers Co., 64 Fatemi Sq., Tehran (98-218855125; FAX: 98-21656658)

International, VEGA Iberia S.A., Plaza del Cedro, 7, San Sebastian 20016 (34-9-43-398774; FAX: 34-9-43-400856)

International, Kontram Oy, P.O. Box 88, Espoo 02201 (358-9-8866-4500; FAX: 358-9-8866-4599)

International, Chemtrols Engineering Ltd., Amar Hill, Sakivhar Rd., Powai, Mumbai 400072 (91-22-857508; FAX: 91-22-8571913)

International, VEGA-Messtechnik AG, Barlozstr. 2, Pfaffikon 8330 (41-9505700; FAX: 41-9505713)

International, Emirates Link for Integrated Technology, 704 Al-Masaod Tower, Hamdan St., P.O. Box 31234, Abu Dhabi (971-2733336; FAX: 971-2733776)

International, VEGA N.V., J. Tieboutstraat 67, Zelik 1731 (32-2-4660505; FAX: 32-2-4668891)

International, Matsushima Machinery Laboratory Co. Ltd., 461 Norimatsu Yahatanishi-Ku, Kitakyushu-Shi 807-0831 (81-93-6913731; FAX: 81-93-6913735)

International, V.G. Tech Ltd. Part., 110/51 Intramara 10, Suthisam Rd., Phayathai, Bangkok 10400 (886-02-61605602; FAX: 886-02-6160563)

International, Hypteck A.S., P.O. Box 7014, Drammen 3007 (47-32837770; FAX: 47-32837771)

International, VEGA Controls Ltd., Kendall House, Victoria Way, Burgess Hill, West Sussex RH15 9NF (44-1444-870055; FAX: 44-1444-870080)

International, AST Automation System Technik Ltd., 29 Sokion St., Myrmittos Athens 12326 (30-01-9709813; FAX: 30-01-9709814)

International, VEGA Osterreich, Moosbergweg 57, Gmunden 4810 (43-7612-654250; FAX: 43-7612-650649)

International, L.OOP, Rua D, Joao V, No. 10-2 Dto., Lisbon 1250 (351-3632939; FAX: 351-3884548)

International, PT Attadipa Elektro, Ruko Permata Jemur, Andayani 118-119 (62-031-8497882; FAX: 62-031-8497883)

International, VEGA Technique S.A., BP 18, Nordhouse, Erstein-Cedex 67151 (33-0388590150; FAX: 33-0388590151)

International, INSTATECH A/S, Algade 133, Vordingborg 4760 (45-5577-20-95; FAX: 45-5577-70-18)

International, Kontram Conrad Eklegren AB, Vretenvagen 10, Solna 171 54 (46-8-56480840; FAX: 46-8-56480850)

International, Durko Endustri Urnierii, Sanayi ve Ticaret A.S., Kore Schitleri Cad. No. 37, Zincirlikuyu/Istanbul 80300 (90-212-2745950; FAX: 90-212-2740420)

International, Dipl. Eng. Vasil Androinic, Aleea Vasile Alecsandri nr. 5, Igsi 6600 (40-032-211708; FAX: 40-032-141870)

International, K-TEST s.r.o., Letna 40, Kosice 04260 (46-095-6253633)

International, Abacus Plus KFT, Rakospatak u.6., Budapest 1142 (36-01-3631474; FAX: 36-01-2219704)

International, Introl S.C., ul. T. Kosciuszki 112, Katowice 40-519 (48-032-2053344; FAX: 48-032-2519207)

International, Global Test OOD, Bul. Vitosa 10, Et. 5, Ap. 19, Sofia 1000 (02-895060; FAX: 02-816787)

International, Ivan Krpic-Vranko, Ivana Turka 5, Senkovec 10292 (385-01-795-680; FAX: 385-01-795-880)

International, Controlmatic Commerce d.o.o., Ljubljanska 80, Domzale 1230 (061-711775; FAX: 061-711765)

International, VEGA-Krahulec, Vikova 34, Prague 3, Zizkov 13000 (46-02-22716011; FAX: 46-02-6976614)

International, Korea Flowcell Mfg., 376-6 Chungchundong, Bupyoung-Ku, Incheon (82-032-522-5161; FAX: 82-032-522-5166)

International, F. P. Israel Ltd., 18 Galgalei Haplada St., P.O. Box 400, Herliya 46103 (972-09-9521666; FAX: 972-09-957340)

International, China Scientific Co., 4/F Thomson Commercial Bldg., 8 Thomson Rd., Wanchai, Hong Kong (852-25279261; FAX: 852-28656141)

International, VEGA Co. Ltd., 95 Zhi Cheng Rd., Hebei District, Tianjin 300232 (86-202-26273296; FAX: 86-202-26273297)

International, Intront Automation Ltd., Telesp u. 4, Budapest 1147 (36-01-267-1441; FAX: 36-01-267-1441)

International, VEGA Italia, S.r.l., Via G. Watti 37, Milano 20143 (39-02-8914081; FAX: 39-02-89140840)

International, Intrumatic Ltda., Carrera 31 No. 90-66, Santafe de Bogota D.C. (57-01-6164169; FAX: 57-01-2572005)

International, Intrumatic Ltd., P.O. Box 22-6 71, Otahuhu (64-09-2767096; FAX: 64-09-276209)

International, Plentiful Industrial Co. Ltd., P.O. Box 46-671, 8F, 67, Sung Chiang Rd., Taipei 10428 (886-02-25073389)

International, VEGA Instruments (SEA) PTE Ltd., Block 134 #02-309 L, Jurong East St. 13, Singapore 600134 (65-5640531; FAX: 65-5675213)

International, VEGA Australia Pty. Ltd., 11/17, Clearview Place, Brookvale, N.S.W. 2100 (61-02-99391711; FAX: 61-02-99396326)

International, VEGA Industrie Automatisierung, Postbus 210, Amerfoort 3800 EA (31-34-402502; FAX: 31-33-4561414)

International, Meditecna SRL, Camarones 1720, Buenos Aires 1416 (54-01-585-7005; FAX: 54-01-585-7005)

International, VEGA Instruments Pty. Ltd., P.O. Box 692, Wilgehuweis 1736 (27-011-9581901; FAX: 27-011-9581899)

International, Kron Instrumentos Electricos Ltda., Rua Vieira De Moraes, Sao Paulo SP-04617-0 (55-011-533-1800; FAX: 55-011-241-2433)

International, RA Regelung Automation (SEA) Sdn. Bhd./Subang Indah, 35-M, Jalan PJS 11/2, Petaling Jaya Selangor DE 46000 (60-03-7350300; FAX: 60-03-7352213)

International, Tradeprints, Inc., 3A P.M. Santiago Bldg., 5081 P. Burgos St., Makati City 1234 (63-02-89293294; FAX: 63-02-8993339)

International, Electronica Industrial, Schadler y Cia. Ltda., Av. Antonio Varas 1871, Providencia, Santiago 562-02-2747430; FAX: 56-02-2049338)

Vent-A-Fume, 51 Botsford Place, Buffalo, New York 14216 (877-876-8368; 716-876-2023; FAX: 716-876-4383; e-mail: info@ventafume.com; web site: www.VentAIn.com)

Veolia Environmental Services, 200 E. Randolph, Ste. 7900, Chicago, Illinois 60601 ((312) 552-2800; FAX: (312) 552-2837; web site: www.veoliaes.com)

Veolia Water Solutions & Technologies, 250 Airside Drive, Airside Business Park, Moon Township, PA 15108 (412-809-6000; FAX: 412-809-6512; e-mail: water.info@veoliawater.com; web site: www.veoliawater.com)

Vibra-Metrics, div. of Mistras Holdings, 195 Clarksville Rd., Princeton Junction, NJ 08550 (609-716-4000; FAX: 609-716-0706; e-mail: sales@mistrasgroup.com; web site: www.mistrasgroup.com)

Vibra Screw Inc., 755 Union Blvd., P.O. Box 229, Totowa, NJ 07511 (973-256-7410; FAX: 973-256-7567; e-mail: info@vibrascrew.com; web site: www.vibrascrew.com)

Viega, 301 N. Main, 9th Floor, Wichita, Kansas 67202 ((316) 425-7400; FAX: (316) 425-7618; e-mail: inside-sales@viega.com; web site: www.viega.com)

Vista Control Systems, Inc., 2101 Trinity Drive, Ste Q, Los Alamitos, NM 87544 (505-662-2484; FAX: 505-662-3956; e-mail: clout@vista-control.com; web site: www.vista-control.com)

Voith Turbo GmbH & Co. KG, Voithstr. 1, Craisheim, 74564 (+49 7951 32-0; FAX: +49 7951 32-500; e-mail: info.voithturbo@voith.com; web site: www.voith.com)

Vortab Company, 1755 La Costa Meadows Drive, San Marcos, CA 92078 ((800) 854-9959; (760) 736-6114; FAX: (760) 736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.vortab.com)

Vortex, 1725 Vortex Avenue, Salina, Kansas 67401-1768 (888-829-7821; 785-825-7177; FAX: 785-825-7194; e-mail: vortex@vortexvalves.com; web site: www.vortexvalves.com)

W



WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

WABASH MAINTAINS AND PROVIDES.....

Large Inventories, 24 Hour Service - 7 Days a Week!

Immediate Shipment - World Wide Support

Complete Engineering & Field Support Services:

"Start-Up" * Supervision * Project Management

Locations across the US, including Wheeling, IL, Saginaw, MI, Tyler, TX, and Miami, FL

We are your most convenient option. Contact us today!

Walchem, IWAKI America, Inc., 5 Boynton Rd., Holliston, MA 01746 (508-429-1110; FAX: 508-429-7433; e-mail: info@walchem.com; web site: www.walchem.com)

Walker Magnetics, 60C Solferino Street, Wor, Massachusetts 01604 (414-321-9739; FAX: 414-321-9756; e-mail: mor-mag@earthlink.net; web site: www.walkermagnet.com)
 Wall Colmonoy Corporation, 101 W. Girard Ave., Madison Heights, MI 48071 (800-521-2412; 248-585-6400; FAX: 248-585-7960; e-mail: wcc@wallcolmonoy.com; web site: www.wallcolmonoy.com)

WALTHER-PRAEZISION, Quick Coupling Systems, Westfalenstr./ße 2, 42781 (+49 2129 567-0; FAX: +49 2129 567-450; e-mail: info@walther-praezision.de; web site: www.walther-praezision.de)

WaterProfessionals, 2004 Highway 75, P.O. Box 1037 TCAS, Blountville, TN 37617 (1-800-999-4195; 18009994195; e-mail: waterprofessionals@gmail.com; web site: www.waterprofessionals.com/)

Watersaver Co., a division of CDI, 5870 E 56th Avenue, Commerce City, CO 80022-3932 (800-525-2424; 303-289-1818; FAX: 303-287-3136; e-mail: sales@watersaver.com; web site: www.watersaver.com)

Watlow, 12001 Lackland Rd., St. Louis, MO 63146 (1-800-928-5692; 314-878-4600; FAX: 314-878-6814; e-mail: inquiry@watlow.com; web site: www.watlow.com)

Weir Specialty Pumps, 440 W. 800 S., P.O. Box 209, Salt Lake City, UT 84101-0209 (801-359-8731; FAX: 801-355-9303; e-mail: info@weirsp.com; web site: www.weirpowerindustrial.com)

Werum Software & Systems AG, Wulf-Werum Strasse 3, Lüneburg 21337 (49-4131-8900-0; FAX: 49-4131-8900-20; e-mail: info@werum.com; web site: www.werum.com)

Westchester Germicide Co., 292 Alpha Dr., Pittsburgh, PA 15238 (800-556-0111; 412-252-7000; FAX: 412-252-1005)

Westech Engineering Inc., 3665 S. West Temple, Salt Lake City, UT 84115-4409 (801-265-1000; FAX: 801-265-1080; e-mail: info@westech-inc.com; web site: www.westech-inc.com)

Western States Machine Co., P.O. Box 327, Hamilton, OH 45012-0327 (513-863-4758; FAX: 513-863-3846; e-mail: sales@westernstates.com; web site: www.westernstates.com)

WIKA Instrument, LP, 1000 Wiegand Blvd., Lawrenceville, GA 30043 (888-WIKA-USA; 770-513-8200; FAX: 770-338-5118; e-mail: info@wika.com; web site: www.wika.com)

Wilhelm Siefert GmbH & Co. KG, Bahnhofstr. 114, Velbert 42551 (020519575-0; FAX: 020519575-16; e-mail: info@siefert-trigonal.de; web site: www.siefert-trigonal.de)

Willbros Tank Company, 411 Bayou Dr., Channelview, TX 77530 (713-403-6880; FAX: 281-457-1063; e-mail: david.murchie@willbros.com; web site: www.willbros.com)

William Grant Tank & Vessel, Inc., P O Box 1191, Henderson, Texas 75653 ((903) 657-6100; FAX: (903) 657-6200; e-mail: sales@wgtandv.com; web site: www.wgtandv.com)

Williamson Corporation, 70 Domino Dr., Concord, MA 01742 (800-300-8367; 978-369-9607; FAX: 978-369-5485; e-mail: sales@williamsonir.com; web site: www.williamsonir.com)

WinSim Inc., 8653 FM 2759 Rd, Richmond, TX 77469 (281-545-9200; FAX: 281-545-8820; e-mail: sales@winsim.com; web site: www.winsim.com)

Winter Walking (a JORDAN DAVID company), 400 Babylon Road, Horsham, PA 19044 (888-667-5477; 215-441-9595; FAX: 215-441-9642; e-mail: info@winterwalking.com; web site: www.winterwalking.com)

WITTE PUMPS & TECHNOLOGY GmbH, Lise-Meitner-Allee 20, 25436 Tornesch (04120 706590; FAX: 04120 7065949; e-mail: info@witte-pumps.de; web site: www.witte-pumps.de)

Witzenmann GmbH, Postfach 101280, Pforzheim 75112 (49-7231-581-0; FAX: 49-7231-581-820; e-mail: w@witzenmann.com; web site: www.witzenmann.de)

W.L. Gore & Associates, Sealant Technologies, 201 Airport Road, P.O. Box 1488, Elkton, Maryland 21921 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Wolsey Industrial Group, 12500 Jefferson Avenue, Newport News, VA 23602 ((757) 989-2555; e-mail: WNA.IndustrialSupport@Wolsey.com; web site: www.wolsey-industrialgroup.com)

WOMA Corp., 95 Newfield Ave., Suite K, P.O. Box 6793, Edison, NJ 08818-6793 (800-258-5530; FAX: 732-417-0015; e-mail: womacorp@frontier.com; web site: www.womacorp.com)

Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)

WSF Industries, P O Box 400, Kenmore Branch, Buffalo, NY 14217 (800-874-8265; 716-692-4930; e-mail: sales@wsf-inc.com; web site: www.wsf-industries.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

X

Xiril AG, Garstligweg 2, Hombrechtikon CH-8634 (+41 55 254 77 77; FAX: +41 55 254 77 99; e-mail: info@xiril.com; web site: www.xiril.com)

Xiril AG, Garstligweg 2, Hombrechtikon CH-8634 (+41 55 254 77 77; FAX: +41 55 254 77 99; e-mail: info@xiril.com; web site: www.xiril.com)

Y

YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysinc@ys-inc.com; web site: www.ys-inc.com)

Z

ZCL Composites Inc, Corrosion Division, 1420 Parsons Rd, SW, Edmonton, T6X 1M5 (7804666648; 7804666648; e-mail: zclcorrosion@zcl.com; web site: www.zcl.com)

ZCL Dualam, Inc., 1420 Parsons Road (Southwest), Edmonton, T6X 1M5 (800-661-8265; 780-466-6648; FAX: 780-466-6126; e-mail: webmaster@zcl.com; web site: www.zcl.com)

ZEECO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

Zeton Inc., 740 Oval Court, Burlington, L7L 6A9 (877-299-3866; 905-632-3123; FAX: 905-632-0301; e-mail: pilot-plants@zeton.com; web site: www.zeton.com)

ZIRCAR Refractory Composites, Inc., P.O. Box 489, Florida, NY 10921 (845-651-2200; FAX: 845-651-1515; e-mail: sales@zrci.com; web site: www.zrci.com)

CORZAN HP
INDUSTRIAL SYSTEMS

Introducing Corzan® HP, creating piping systems with better

CORROSION RESISTANCE
AND HIGH-TEMPERATURE PERFORMANCE
for transmission of **CHEMICAL FLUIDS**,
all made with LUBRIZOL TECHNOLOGY
TO GIVE YOU MORE INSIDE.™



Follow us
on Twitter
@LZ_CPVC

Corzan HP is a high-pressure, high-temperature, high-impact-strength piping system engineered with Lubrizol's specially formulated chlorinated polyvinyl chloride (CPVC) compounds that meet the ASTM D1784 certification for 24448 cell class. **It's the first pipe that meets ASTM F441 material classification 4120-06, with a pressure rating 25% higher than standard CPVC at 180°F (82°C).**

Choose Corzan HP for Chemical Processing, Semiconductor & Electronics, Water Treatment, Industrial Manufacturing, Mining and Power Generation applications.

See how the details on the inside make all the difference on the outside. Call a piping systems consultant at **1.216.447.7397** or visit corzancpvc.com to learn more.

Lubrizol

© 2014 The Lubrizol Corporation, all rights reserved. All marks are the property of The Lubrizol Corporation. The Lubrizol Corporation is a Berkshire Hathaway company. GC 140681

Circle 21 on p. 190 or go to adlinks.chemengonline.com/56204-21

TLV STEAM TRAPS

LONG LIFE, ENERGY EFFICIENCY, & MAXIMUM PROCESS PRODUCTION

Free Float® and Float-Dynamic® Steam Traps

Free Float and Float-Dynamic steam traps are designed for drip, tracer, clean steam, and process service to 1,740 psig. Capacities of Float-Dynamic models are as high as 350,000 lb/hr with drain trap leakage rating equivalent to Class 6. Free Float stainless steel ball float serves as main valve and responds instantly to condensate flow. Entire surface of ball serves as main valve. No hinges or linkages are used. Separate thermostatic element removes any air present in the system. TLV's Float-Dynamic steam traps utilize a Free Float ball valve to actuate a piston operated main valve to provide a high condensate drainage capacity. Traps provide reduced maintenance, lower operating costs, and long service life.

SST Series

Stainless steel traps, all stainless steel internals. For drip, tracer, and clean steam applications to 650 psig. Connection NPT, S.W. or flanged. ½ - 1" horizontal & vertical configurations.



SJ, J, JL Series

Cast steel and cast iron float traps, stainless steel internals for all applications to 300 psig, capacities to 131,850 lb/hr. NPT, flanged connections ½ - 4" straight through horizontal or same side parallel sizes.



SH, JH(R)(L) Series

Carbon steel or chrome moly traps, all stainless steel internals. Steam tight even under low condensate flow conditions for high pressure superheat applications to 1,740 psig, capacities to 350,000 lb/hr. NPT, S.W., or flanged connections. ½ - 1" in horizontal or vertical configurations.

PowerTrap® Non-Electric Pumps: GP & GT Series

TLV's unique, patented, non-electric pumps permit the return of condensate or other fluids by using the motive force of steam or compressed air. TLV pumps eliminate the problems associated with electric pumps (leaking seals, faulty motor controls, cavitation, failed motors, and hazardous locations). The patented float operated mechanism uses an Inconel spring which compresses rather than stretches to activate the pump. Other internals are stainless steel with critical wearing parts first heat treated, then an additional super hard coating is applied to deliver the most reliable non-electric pump available. Cast iron, carbon steel, or stainless steel non-electric pumps with capacities exceeding 80,000 lb/hr. Available in pump or pump/trap combinations for wide range of applications. NPT or S.W. connections from 1 - 3".



PowerDyne™ Steam Traps

TLV's PowerDyne steam traps offer the widest pressure range of any thermodynamic steam trap available and combine both a thermodynamic disc and a thermostatic air vent to provide fast, efficient removal of condensate and air. PowerDyne steam traps are available with in-line replacement modules for ease of maintenance.

P Series

Carbon steel and stainless steel traps, all stainless steel internals. For drip, tracer, and light processes to 1,400 psig, capacities to 4,550 lb/hr. NPT, S.W., or flanged connection in ¼ - 1" horizontal configurations.



QuickTrap® Series

Two-bolt replacement system enables installation in minutes. Universal flange design permits correct installation in any configuration. Choose from Free Float, Thermodynamic or Thermostatic up to 650 psig. ½ - 1" available in NPT, S.W. or flanged.



HR Series

Chrome moly traps with in-line replacement modules for high pressure drip applications to 3,700 psig, capacities to 1,050 lb/hr. NPT, S.W. or flanged Connections ½ - 1" horizontal configurations.



Thermostatic Steam Traps

TLV's thermostatic steam traps deliver the benefits of efficient operation and long service life. Design of stainless steel internal components, bimetallic elements or patented balanced pressure capsule, along with high temperature rating (572°F) make traps suitable for use on all applications.

L Series

Maintainable carbon or stainless steel traps with patented "fail-open" design for drip, tracer, and clean steam, to 650 psig, capacities to 1,700 lb/hr. NPT, S.W., or flanged in ½ - 1" horizontal or vertical configurations.



TrapMan®

Computerized Steam Trap Management System. Complete measurement and analysis consisting of Trapman hardware, a precise ultrasonic and temperature testing instrument, and TrapManager® software, a comprehensive Windows 7 program designed to enable extensive data analysis and database management of the entire trap population.



TLV®

TLV CORPORATION
13901 South Lakes Drive
Charlotte, NC 28273-6790
Tel: 704-597-9070 Fax: 704-583-1610
www.tlv.com

FOR TECHNICAL ASSISTANCE CALL:

1-800-TLV-TRAP

Circle 32 on p. 190 or go to adlinks.chemengonline.com/56204-32

1

LIQUID, GAS, AND AIR HANDLING

100	Air separation equipment	102	Pipe, plastic
100	Compressors	102	Pump parts & fittings
100	Ducts & ventilation systems	102	Pumps, centrifugal
100	Dust & Ventilation Systems	103	Pumps, lined
100	Fans & blowers	103	Pumps, other
101	Flexible hose, metallic & nonmetallic	105	Pumps, proportioning
101	Pipe fittings & couplings, metallic & nonmetallic	105	Pumps, reciprocating
102	Pipe, alloy steel	105	Pumps, rotary
102	Pipe, aluminum & aluminum alloys	105	Pumps, special materials
102	Pipe, carbon steel	106	Pumps, vacuum & ejector
102	Pipe, copper & copper alloys	106	Pumps, vertical & deep well
102	Pipe, lined	107	Seals, gaskets & packing materials
102	Pipe, nonmetallic	107	Steam traps
102	Pipe, other	107	Tanks & other liquid storage vessels
102	Pipe, other nonferrous metals	108	Tubing & tube fittings, metallic & nonmetallic
		109	Valves

DISPLAY ADVERTISERS IN THIS SECTION

Gemü Valves	109
Körting Hannover AG	105

AIR SEPARATION EQUIPMENT

Air separation equipment, cryogenic

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Linde AG, Engineering Division, Pullach ONLY Technology LTD, wuhan, China SIAD Macchine Impianti, Bergamo V2 Flow Controls, Burr Ridge, Illinois

Air separation equipment, membrane

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Linde AG, Engineering Division, Pullach

Air separation equipment, pressure swing adsorption

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

AirSep Corp., Ai A Chart Industries Company, A Chart Industries Company, Buffalo, New York Lectrodryer, Richmond, KY Linde AG, Engineering Division, Pullach

Air separation equipment, vacuum swing adsorption

AirSep Corp., Ai A Chart Industries Company, A Chart Industries Company, Buffalo, New York Linde AG, Engineering Division, Pullach

COMPRESSORS

Compressor lubrication

Cobey, Buffalo, New York Compressor Products International, Stafford, TX Petron Plus Global, Inc., Hutchinson, Kansas Summit Industrial Products, Tyler, TX WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Compressors, centrifugal

BORSIG GmbH, Berlin Dresser-Rand, Corporate Headquarters, Houston, TX EDWARDS US HEADQUARTERS, Sanborn, NY FPZ Inc., Saukville, Wisconsin GARO S.P.A., Monza (MB) MAN Diesel & Turbo SE, Augsburg

Compressors, diaphragm

Fluitron, Inc., Ivyland, PA Gas & Air Systems, Inc., Hellertown, Pennsylvania KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com) Mehrer Compression GmbH, Balingen PDC Machines, Inc., Warminster, PA sera ComPress GmbH, Immenhausen,

Compressors, high pressure

Fluitron, Inc., Ivyland, PA Mehrer Compression GmbH, Balingen PDC Machines, Inc., Warminster, PA SIAD Macchine Impianti, Bergamo WABASH POWER EQUIPMENT CO., 444 CARPENTER AVE., P.O. BOX C, WHEELING, ILLINOIS 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; E-MAIL: INFO@WABASHPOWER.COM; WEB SITE: WWW.WABASHPOWER.COM)

Compressors, oil-free

Busch LLC, Virginia Beach, VA EDWARDS US HEADQUARTERS, Sanborn, NY KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com) MAN Diesel & Turbo SE, Augsburg Mehrer Compression GmbH, Balingen Nash, a Gardner Denver Product, Bentleyville, PA PDC Machines, Inc., Warminster, PA SIAD Macchine Impianti, Bergamo

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com) sera ComPress GmbH, Immenhausen,

Compressors, portable

KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com) sera ComPress GmbH, Immenhausen,

Compressors, reciprocating

BORSIG GmbH, Berlin Compressor Products International, Stafford, TX Dresser-Rand, Corporate Headquarters, Houston, TX GEA Refrigeration North America, York, PA HOERBIGER Kompressortechnik Holding GmbH, Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0; FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)

Mehrer Compression GmbH, Balingen Midwest Steel Company Inc, Houston, Texas PDC Machines, Inc., Warminster, PA SIAD Macchine Impianti, Bergamo WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com) sera ComPress GmbH, Immenhausen,

Compressors, rotary

Busch LLC, Virginia Beach, VA EDWARDS US HEADQUARTERS, Sanborn, NY MAN Diesel & Turbo SE, Augsburg

Compressors, rotary liquid ring

EDWARDS US HEADQUARTERS, Sanborn, NY GARO S.P.A., Monza (MB) Nash Europe Ltd., Winsford, Cheshire Nash, a Gardner Denver Product, Bentleyville, PA Pompetravani SPA, Castano Primo,

Compressors, rotary screw

EDWARDS US HEADQUARTERS, Sanborn, NY GEA Refrigeration North America, York, PA MAN Diesel & Turbo SE, Augsburg Mehrer Compression GmbH, Balingen WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Compressors, rotary sliding vane

EDWARDS US HEADQUARTERS, Sanborn, NY WABASH POWER EQUIPMENT CO., 444 CARPENTER AVE., P.O. BOX C, WHEELING, ILLINOIS 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; E-MAIL: INFO@WABASHPOWER.COM; WEB SITE: WWW.WABASHPOWER.COM)

Compressors, single stage, expander driven

MAN Diesel & Turbo SE, Augsburg

Compressors, turbodynamic

Aerzener Maschinenfabrik GmbH, Reherweg 28, D-31855, Aerzen, (+49 (0)5154 810; FAX: +49 (0)5154 81191; e-mail: info@aerzener.de; web site: www.aerzener.com)

DUCTS & VENTILATION SYSTEMS

Dampers

Henderson Industrial Specialties, Watertown, McGill AirFlow LLC, Groveport, OH

Ducts, fiberglass-reinforced plastic

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan McGill AirFlow LLC, Groveport, OH ZCL Dualam, Inc., Edmonton,

Ducts, flexible

Thorburn Flex, Pointe-Claire Quebec,

Ducts, metallic

McGill AirFlow LLC, Groveport, OH

Ducts, plastic

CORZAN INDUSTRIAL SYSTEMS, 9911 Brecksville Road, Cleveland, Ohio 44141 (888-234-2436; 216-447-7397; FAX: 216-447-6211; e-mail: Corzan@lubrizol.com; web site: www.corzancpvc.com) See our ad on page 97

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan McGill AirFlow LLC, Groveport, OH

Ducts, rigid

McGill AirFlow LLC, Groveport, OH

Exhaust systems, clean-room

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

McGill AirFlow LLC, Groveport, OH Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Hoods, fume collectors

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan



HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

McGill AirFlow LLC, Groveport, OH Turner EnviroLogic, Inc., Deerfield Beach, FL Vent-A-Fume, Buffalo, New York

Ventilation systems

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com) McGill AirFlow LLC, Groveport, OH Strobic Air, a CECO Environmental Company, Telford, Pennsylvania Vent-A-Fume, Buffalo, New York

DUST & VENTILATION SYSTEMS

Laminar Flow Enclosures

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

FANS & BLOWERS

Blowers, axial flow

Chicago Blower Corp., Glendale Heights, IL WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Blowers, centrifugal, compressor-type

Aerzener Maschinenfabrik GmbH, Reherweg 28, D-31855, Aerzen, (+49 (0)5154 810; FAX: +49 (0)5154 81191; e-mail: info@aerzener.de; web site: www.aerzener.com) EDWARDS US HEADQUARTERS, Sanborn, NY INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com) WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Blowers, centrifugal, fan-type

Chicago Blower Corp., Glendale Heights, IL HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Blowers, positive displacement

Aerzener Maschinenfabrik GmbH, Reherweg 28, D-31855, Aerzen, (+49 (0)5154 810; FAX: +49 (0)5154 81191; e-mail: info@aerzener.de; web site: www.aerzener.com)

EDWARDS US HEADQUARTERS, Sanborn, NY
Pompeltravani SPA, Castano Primo,

Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Blowers, regenerative

FPZ Inc., Saukville, Wisconsin

Blowers, rotary piston

Aerzener Maschinenfabrik GmbH, Reherweg 28, D-31855, Aerzen, (+49 (0)5154 810; FAX: +49 (0)5154 81191; e-mail: info@aerzener.de; web site: www.aerzener.com)

EDWARDS US HEADQUARTERS, Sanborn, NY

Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Boosters, rotary piston

EDWARDS US HEADQUARTERS, Sanborn, NY

Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Fans, air cooled

Chicago Blower Corp., Glendale Heights, IL
Hudson Products Corp., Houston, TX

Fans, axial

AIRLANCO, Falls City, NE
Chicago Blower Corp., Glendale Heights, IL
Hudson Products Corp., Houston, TX
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Fans, centrifugal

AIRLANCO, Falls City, NE
AirPro Fan & Blower Company, Wisconsin
Chicago Blower Corp., Glendale Heights, IL
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Fans, cooling tower

Hudson Products Corp., Houston, TX
SPX Cooling Technologies, Overland Park, KS

Fans, corrosion resistant

Chicago Blower Corp., Glendale Heights, IL
Creative Pultrusions, Inc., Alum Bank, PA
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Hudson Products Corp., Houston, TX
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Fans, exhaust

Chicago Blower Corp., Glendale Heights, IL
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Strobic Air, a CECO Environmental Company, Telford, Pennsylvania
Vent-A-Fume, Buffalo, New York

Fans, exhaust or ventilating, general use

Chicago Blower Corp., Glendale Heights, IL
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

Hepa Corporation, Anaheim, CA
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Fans, explosion resistant

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Fans, heavy duty

Chicago Blower Corp., Glendale Heights, IL
INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

Luma Comfort, Orange, CA
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Fans, high temperature

Chicago Blower Corp., Glendale Heights, IL
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Fans, other

Luma Comfort, Orange, CA
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Fans, portable

Vent-A-Fume, Buffalo, New York

Fans, vane, axial

Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

FLEXIBLE HOSE, METALLIC & NONMETALLIC

Hose, air

Aflex Hose USA, LLC, Pipersville, PA
NewAge Industries, Inc., Southampton, PA
PHOENIX Conveyor Belt Systems GmbH, Hamburg

Hose, chemically resistant

Aflex Hose USA, LLC, Pipersville, PA
ELAFLEX - Gummi Ehlers GmbH, Hamburg,
NewAge Industries, Inc., Southampton, PA
PHOENIX Conveyor Belt Systems GmbH, Hamburg

Hose, electrically heated

Aflex Hose USA, LLC, Pipersville, PA
Clean Air Express Equipment, Palatine, IL
Clean Air Instrument Rental, Palatine, IL

Hose fittings

Aflex Hose USA, LLC, Pipersville, PA
ELAFLEX - Gummi Ehlers GmbH, Hamburg,
NewAge Industries, Inc., Southampton, PA
Thorburn Flex, Pointe-Claire Quebec,

Hose, high pressure

ELAFLEX - Gummi Ehlers GmbH, Hamburg,
PHOENIX Conveyor Belt Systems GmbH, Hamburg
Thorburn Flex, Pointe-Claire Quebec,
Witzenmann GmbH, Pforzheim

Hose, jacketed

Aflex Hose USA, LLC, Pipersville, PA

Hose, metallic

Hyspan Precision Prod. Inc., Chula Vista, CA
PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205, P.O. Box 590, Stockton, California 95201-0590 (800-344-3246 USA & Canada; 209-943-6088; FAX: 209-943-0242; e-mail: sales@procoproducts.com; web site: www.procoproducts.com)

Thorburn Flex, Pointe-Claire Quebec,
Witzenmann GmbH, Pforzheim

Hose, nonmetallic, fluoroplastic

Aflex Hose USA, LLC, Pipersville, PA

PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205, P.O. Box 590, Stockton, California 95201-0590 (800-344-3246 USA & Canada; 209-943-6088; FAX: 209-943-0242; e-mail: sales@procoproducts.com; web site: www.procoproducts.com)

Hose, sanitary

Aflex Hose USA, LLC, Pipersville, PA

Hose, steam

Aflex Hose USA, LLC, Pipersville, PA
Witzenmann GmbH, Pforzheim

Hose, vacuum

Escitac, Mesa, AZ
Flowrox Oy, Lappeenranta
NewAge Industries, Inc., Southampton, PA
Vector Technologies Ltd., Milwaukee, WI
Witzenmann GmbH, Pforzheim

Hose, water

NewAge Industries, Inc., Southampton, PA
Witzenmann GmbH, Pforzheim

PIPE FITTINGS & COUPLINGS, METALLIC & NONMETALLIC

Bends, pipe

Fr. Jacob Soehne GmbH & Co. KG, Porta Westfalica, NRW
Viega, Wichita, Kansas

Blinds, pipeline

USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Couplings, dry-disconnect

ELAFLEX - Gummi Ehlers GmbH, Hamburg,

Couplings, flexible

Thorburn Flex, Pointe-Claire Quebec,
Voith Turbo GmbH & Co. KG, Crailsheim,

Couplings, quick connect

CEJN Industrial Corp., Gurnee, Illinois
CPC (Colder Products Company), St. Paul, Minnesota
Thorburn Flex, Pointe-Claire Quebec,
Tuf-Lok International, Madison, WI
WALTHER-PRAEZISION, Quick Coupling Systems,

Couplings, rigid

CPC (Colder Products Company), St. Paul, Minnesota
Tuf-Lok International, Madison, WI

Couplings, self aligning

Tuf-Lok International, Madison, WI

Elbows, pipe

Viega, Wichita, Kansas

Expansion bellows

ELAFLEX - Gummi Ehlers GmbH, Hamburg,
Thorburn Flex, Pointe-Claire Quebec,

Expansion joints, flexible

ELAFLEX - Gummi Ehlers GmbH, Hamburg,
Henderson Industrial Specialties, Watertown,
Hyspan Precision Prod. Inc., Chula Vista, CA
PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205, P.O. Box 590, Stockton, California 95201-0590 (800-344-3246 USA & Canada; 209-943-6088; FAX: 209-943-0242; e-mail: sales@procoproducts.com; web site: www.procoproducts.com)

Thorburn Flex, Pointe-Claire Quebec,
Witzenmann GmbH, Pforzheim

Expansion joints, swivel

ELAFLEX - Gummi Ehlers GmbH, Hamburg,

Flanges

ELAFLEX - Gummi Ehlers GmbH, Hamburg,
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER
PUMPS, One Hayward Industrial Drive, Clemmons,
North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)
Micromold Products, Inc., Yonkers, New York
USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)
Viega, Wichita, Kansas

PRODUCT DIRECTORY

Flow conditioners

Vortab Company, San Marcos, CA

Hangers, pipe & tube

Tuf-Lok International, Madison, WI
Witzenmann GmbH, Pforzheim

Joints, swivel

ELAFLEX - Gummi Ehlers GmbH, Hamburg,

Pipe adapters

Afflex Hose USA, LLC, Pipersville, PA
Fr. Jacob Soehne GmbH & Co. KG, Porta Westfalica, NRW
Viega, Wichita, Kansas

Pipe fittings, emergency repair

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr.,
Alvin, Texas 77511 (800-662-8326; 800-662-8326;
FAX: 281-331-4107; e-mail: contact@teaminco.com;
web site: www.teamindustrialservices.com)
Viega, Wichita, Kansas

Pipe fittings, graphite

Nantong Fareast Chemical Equipment Co. LTD, Interna-
tional Trading, Nantong

Pipe fittings, high pressure

KRAISSL CO. INC., 299 Williams Ave., Hackensack,
New Jersey 07601-5225 (800-572-4775; 201-342-
0008; FAX: 201-342-0025; e-mail: kraissl@aol.com;
web site: www.strainers.com)
Tuf-Lok International, Madison, WI

Pipe fittings, jacketed

Dueker GmbH & Co. KGaA, Laufach
KRAISSL CO. INC., 299 Williams Ave., Hackensack,
New Jersey 07601-5225 (800-572-4775; 201-342-
0008; FAX: 201-342-0025; e-mail: kraissl@aol.com;
web site: www.strainers.com)

Pipe fittings, lined

Abresist Kalenborn Corporation, Urbana, IN
Afflex Hose USA, LLC, Pipersville, PA

Pipe fittings, nonmetallic

CORZAN INDUSTRIAL SYSTEMS, 9911 Brecksville
Road, Cleveland, Ohio 44141 (888-234-2436; 216-
447-7397; FAX: 216-447-6211; e-mail: Corzan@lubr-
izol.com; web site: www.corzancpvc.com)
See our ad on page 97

Micromold Products, Inc., Yonkers, New York
PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205,
P.O. Box 590, Stockton, California 95201-0590 (800-
344-3246 USA & Canada; 209-943-6088; FAX: 209-
943-0242; e-mail: sales@procoproducts.com; web
site: www.procoproducts.com)

Pipe fittings, sanitary

Micromold Products, Inc., Yonkers, New York

Pipe strainers

Armstrong International, Three Rivers, MI
KRAISSL CO. INC., 299 Williams Ave., Hackensack,
New Jersey 07601-5225 (800-572-4775; 201-342-
0008; FAX: 201-342-0025; e-mail: kraissl@aol.com;
web site: www.strainers.com)

Micromold Products, Inc., Yonkers, New York

Unions, pipe

Viega, Wichita, Kansas

PIPE, ALLOY STEEL

Pipe, high-alloy steel

TW Metals, Exton, PA

Pipe, nickel & nickel alloy

Arch City Steel, Fenton, Missouri
Corrosion Materials, Baker, LA
Regal Industries, Inc., Painesville, OH
SANDVIK MATERIALS TECHNOLOGY, TUBULAR
PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania
18501 (800-755-8823; 570-585-7500; FAX: 570-585-
7642; web site: www.smt.sandvik.com)
See our ad on page 76

TW Metals, Exton, PA
Viega, Wichita, Kansas

Pipe, stainless steel

Arch City Steel, Fenton, Missouri
Regal Industries, Inc., Painesville, OH

SANDVIK MATERIALS TECHNOLOGY, TUBULAR
PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania
18501 (800-755-8823; 570-585-7500; FAX: 570-585-
7642; web site: www.smt.sandvik.com)
See our ad on page 76

TW Metals, Exton, PA
Viega, Wichita, Kansas
Wolsley Industrial Group, Newport News, VA

PIPE, ALUMINUM & ALUMINUM ALLOYS

Pipe, aluminum

TW Metals, Exton, PA

Pipe, aluminum alloy

TW Metals, Exton, PA

PIPE, CARBON STEEL

Pipe, carbon steel, seamless

Wolsley Industrial Group, Newport News, VA

PIPE, COPPER & COPPER ALLOYS

Pipe, copper

Regal Industries, Inc., Painesville, OH

PIPE, LINED

Pipe, ceramic lined

Abresist Kalenborn Corporation, Urbana, IN

Pipe, glass lined

Dueker GmbH & Co. KGaA, Laufach

Pipe, plastic lined

FABRICATED PLASTICS LIMITED, MAPLE
Wolsley Industrial Group, Newport News, VA

PIPE, NONMETALLIC

Pipe, glass

Technical Glass Products, Painesville, OH

Pipe, graphite

CG Thermal LLC, Twinsburg, Ohio
Nantong Fareast Chemical Equipment Co. LTD, Interna-
tional Trading, Nantong

Pipe, hard rubber

PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205,
P.O. Box 590, Stockton, California 95201-0590 (800-
344-3246 USA & Canada; 209-943-6088; FAX: 209-
943-0242; e-mail: sales@procoproducts.com; web
site: www.procoproducts.com)

Pipe, rubber

PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205,
P.O. Box 590, Stockton, California 95201-0590 (800-
344-3246 USA & Canada; 209-943-6088; FAX: 209-
943-0242; e-mail: sales@procoproducts.com; web
site: www.procoproducts.com)

PIPE, OTHER

Pipe, ceramic-metal

Abresist Kalenborn Corporation, Urbana, IN

Pipe, containment

Team Industries, Inc., Kaukauna, WI

Pipe, custom fabricated

Abresist Kalenborn Corporation, Urbana, IN
FABRICATED PLASTICS LIMITED, MAPLE
Team Industries, Inc., Kaukauna, WI

Liquid, gas, and air handling

Pipe, finned

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite
100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-
3736; FAX: 330-334-3848; e-mail: mb@fintube.com;
web site: www.fintube.com)

Pipe, flanged

Abresist Kalenborn Corporation, Urbana, IN
Fr. Jacob Soehne GmbH & Co. KG, Porta Westfalica, NRW
Team Industries, Inc., Kaukauna, WI

Pipe, jacketed

Dueker GmbH & Co. KGaA, Laufach
Team Industries, Inc., Kaukauna, WI

Pipe, prefabricated

Team Industries, Inc., Kaukauna, WI

PIPE, OTHER NONFERROUS METALS

Bellows, metallic

Thorburn Flex, Pointe-Claire Quebec,

Pipe, sanitary

Team Industries, Inc., Kaukauna, WI

PIPE, PLASTIC

Pipe, ABS

Georg Fischer Piping Systems Ltd., Schaffhausen 8201
(41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.
ps@georgfischer.com; web site: www.gfps.com)

Pipe, PTFE

Micromold Products, Inc., Yonkers, New York
PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205,
P.O. Box 590, Stockton, California 95201-0590 (800-
344-3246 USA & Canada; 209-943-6088; FAX: 209-
943-0242; e-mail: sales@procoproducts.com; web
site: www.procoproducts.com)

Pipe, chlorinated PVC

CORZAN INDUSTRIAL SYSTEMS, 9911 Brecksville
Road, Cleveland, Ohio 44141 (888-234-2436; 216-
447-7397; FAX: 216-447-6211; e-mail: Corzan@lubr-
izol.com; web site: www.corzancpvc.com)
See our ad on page 97

Georg Fischer Piping Systems Ltd., Schaffhausen 8201
(41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.
ps@georgfischer.com; web site: www.gfps.com)

Pipe, polyethylene

Georg Fischer Piping Systems Ltd., Schaffhausen 8201
(41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.
ps@georgfischer.com; web site: www.gfps.com)

Pipe, polypropylene

Georg Fischer Piping Systems Ltd., Schaffhausen 8201
(41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.
ps@georgfischer.com; web site: www.gfps.com)

Pipe, polyvinylidene fluoride

Georg Fischer Piping Systems Ltd., Schaffhausen 8201
(41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.
ps@georgfischer.com; web site: www.gfps.com)

Pipe, vinyl ester - glass

ZCL Dualam, Inc., Edmonton,

PUMP PARTS & FITTINGS

Bushings, pump

Iwaki America, Holliston, MA
3M Technical Ceramics, Kempten,
Scenic Precise Element Inc., Kaohsiung City

Sleeves, pump

Thermal Spray Solutions, Inc., Chesapeake, Virginia

PUMPS, CENTRIFUGAL

Pumps, centrifugal, ANSI

Allweiler GmbH, Radolfzell
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500,
Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-
6800; web site: www.flowserve.com)

GRI Pumps, Bellville, OH
Hermetic-Pumpen GmbH, Gundelfingen

ITT Äi Goulds Pumps, Seneca Falls, New York
Iwaki America, Holliston, MA
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
National Pump Company, Glendale, AZ
Richter Chemie-Technik GmbH, Kempen
Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, centrifugal, double suction

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Pumps, centrifugal, dry running

Iwaki America, Holliston, MA
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Pumps, centrifugal, inline

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

ITT Äi Goulds Pumps, Seneca Falls, New York
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Pumps, centrifugal, multistage

Dickow Pump Co., Marietta, GA
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Pompetravaini SPA, Castano Primo, Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, centrifugal, process, medium duty

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Iwaki America, Holliston, MA
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, centrifugal, self-priming

Dickow Pump Co., Marietta, GA
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Hermetic-Pumpen GmbH, Gundelfingen
ITT Äi Goulds Pumps, Seneca Falls, New York
Iwaki America, Holliston, MA
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
National Pump Company, Glendale, AZ
Pompetravaini SPA, Castano Primo, SAWA Pumpentechnik AG, Degersheim, SRS Crisafulli, Inc., Glendive, MT
Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, centrifugal, single stage

Dickow Pump Co., Marietta, GA
FLUX-GERAETE GMBH, Maulbronn
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

GRI Pumps, Bellville, OH
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
Pompetravaini SPA, Castano Primo, SAWA Pumpentechnik AG, Degersheim, Weir Specialty Pumps, Salt Lake City, UT

Pumps, leakproof

Dickow Pump Co., Marietta, GA
FELUWA Pumpen GmbH, Muerlenbach

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Hermetic-Pumpen GmbH, Gundelfingen
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
Roth Pump, Rock Island, Illinois
Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, propeller

Allweiler GmbH, Radolfzell
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Friatec AG Division Rheinhuetten Pumpen, Wiesbaden National Pump Company, Glendale, AZ

Pumps, screw centrifugal

Allweiler GmbH, Radolfzell
Busch LLC, Virginia Beach, VA
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Weir Specialty Pumps, Salt Lake City, UT

Pumps, turbine

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Iwaki America, Holliston, MA
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
National Pump Company, Glendale, AZ
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Pumps, turbine, regenerative

Roth Pump, Rock Island, Illinois

PUMPS, LINED

Pumps, ceramic lined

Abresist Kalenborn Corporation, Urbana, IN
Fluid Metering, Inc., Syosset, New York
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)

Pumps, other lined

Boerger Pumps, Chanhassen, MN
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)

Pumps, plastic lined

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
Fluid Metering, Inc., Syosset, New York
Friatec AG Division Rheinhuetten Pumpen, Wiesbaden
ITT Äi Goulds Pumps, Seneca Falls, New York
Iwaki America, Holliston, MA
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
Richter Chemie-Technik GmbH, Kempen

Pumps, rubber lined

Flowrox Oy, Lappeenranta
Metso Flow Control Inc, Vantaa, Finland,
NETZSCH Pumpen & Systeme GmbH, Waldkraiburg.

PUMPS, OTHER

Positive Displacement Pumps

Roth Pump, Rock Island, Illinois

Pumps, acid, corrosive

BJM Pumps, LLC, Old Saybrook, CT
Blackhawk Technology Company, Glen Ellyn, Illinois
Boerger Pumps, Chanhassen, MN
Dickow Pump Co., Marietta, GA
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
Fluid Metering, Inc., Syosset, New York
Friatec AG Division Rheinhuetten Pumpen, Wiesbaden
GRI Pumps, Bellville, OH

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

Hermetic-Pumpen GmbH, Gundelfingen
ITT Äi Goulds Pumps, Seneca Falls, New York
JLS International, Inc., Charlotte, North Carolina
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
NETZSCH Pumpen & Systeme GmbH, Waldkraiburg, Richter Chemie-Technik GmbH, Kempen
Teikoku USA, Inc., Warminster, Pennsylvania
URACA GmbH & Co. KG, Sirchinger Str. 15, Bad Urach, 72574 (07125-133-0; FAX: 07125-133-202; e-mail: info@uraca.de; web site: www.uraca.com)

WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch Weir Specialty Pumps, Salt Lake City, UT
seepex GmbH, Bottrop
sera ProDos GmbH, Immenhausen,

Pumps, air driven

Boerger Pumps, Chanhassen, MN
CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Pumps, axial flow

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Pumps, battery-powered

FLUX-GERAETE GMBH, Maulbronn
Fluid Metering, Inc., Syosset, New York
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)

Pumps, canned motor

Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, carboy or drum

Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Pumps, channel impeller

BJM Pumps, LLC, Old Saybrook, CT

Pumps, condensate return

Armstrong International, Three Rivers, MI
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

RTH Pump, Rock Island, Illinois
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Pumps, cryogenic

Busch LLC, Virginia Beach, VA
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, disc

Boerger Pumps, Chanhassen, MN

Pumps, dry vacuum

EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
PFEIFFER VACUUM GMBH, Berliner Strasse 43, Asslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)
Pfeiffer Vacuum, Inc., Nashua, NH

Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Pumps, explosion proof

ABEL GmbH & Co. KG, Buechen, Allweiler GmbH, Radolfzell
BJM Pumps, LLC, Old Saybrook, CT
Blackhawk Technology Company, Glen Ellyn, Illinois
Boerger GmbH, Borken-Weseke
Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
EDWARDS US HEADQUARTERS, Sanborn, NY
FLUX-GERAETE GMBH, Maulbronn
Fluid Metering, Inc., Syosset, New York

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)

Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
Nash, a Gardner Denver Product, Bentleyville, PA
SAWA Pumpentechnik AG, Degersheim,
SRS Crisafulli, Inc., Glendive, MT
WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch

Pumps, flexible impeller

Cole-Parmer, Vernon Hills, IL

Pumps, gas mixing

Schutte & Koerting, Treviso, PA

Pumps, hand

Beamex, Inc., Marietta, GA

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Pumps, high pressure

Allweiler GmbH, Radolfzell
Beamex, Inc., Marietta, GA
Cat Pumps, Minneapolis, MN
Compressor Products International, Stafford, TX
Dickow Pump Co., Marietta, GA
FELUWA Pumpen GmbH, Muerlenbach

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Fluitron, Inc., Iyland, PA

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Hammelmann Corp., Miamisburg, OH

JLS International, Inc., Charlotte, North Carolina
LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

Maag Pump Systems AG, Oberglatt / ZH,
Pompetravaini SPA, Castano Primo,
Roth Pump, Rock Island, Illinois
SAWA Pumpentechnik AG, Degersheim,
Supercritical Fluid Technologies, Inc., Delaware
Teikoku USA, Inc., Warminster, Pennsylvania

URACA GmbH & Co. KG, Sirchinger Str. 15, Bad Urach, 72574 (07125-133-0; FAX: 07125-133-202; e-mail: info@uraca.de; web site: www.uraca.com)

WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch
WOMA Corp., Edison, NJ
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)
Weir Specialty Pumps, Salt Lake City, UT

Pumps, jacketed

Boerger Pumps, Chanhassen, MN
Dickow Pump Co., Marietta, GA

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Hermetic-Pumpen GmbH, Gundelfingen

LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

Teikoku USA, Inc., Warminster, Pennsylvania
WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch

Pumps, magnetically driven

Allweiler GmbH, Radolfzell
Dickow Pump Co., Marietta, GA

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Friatec AG Division Rheinhuetten Pumpen, Wiesbaden

GRI Pumps, Bellville, OH

ITT Äi Goulds Pumps, Seneca Falls, New York

Iwaki America, Holliston, MA

JLS International, Inc., Charlotte, North Carolina

Maag Pump Systems AG, Oberglatt / ZH,

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

PFEIFFER VACUUM GMBH, Berliner Strasse 43, Aslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)

Pompetravaini SPA, Castano Primo,

SAWA Pumpentechnik AG, Degersheim,

WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch

sera ProDos GmbH, Immenhausen,

Pumps, mixed flow

Boerger Pumps, Chanhassen, MN

Fluid Metering, Inc., Syosset, New York

National Pump Company, Glendale, AZ

Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, oil free

Busch LLC, Virginia Beach, VA

EDWARDS US HEADQUARTERS, Sanborn, NY

KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)

Nash, a Gardner Denver Product, Bentleyville, PA

PFEIFFER VACUUM GMBH, Berliner Strasse 43, Aslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)

Pleiffer Vacuum, Inc., Nashua, NH

Siemens Process Industries and Drives, Alpharetta, Georgia

Teikoku USA, Inc., Warminster, Pennsylvania

Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Pumps, open impeller

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

GRI Pumps, Bellville, OH

ITT Äi Goulds Pumps, Seneca Falls, New York

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

Pompetravaini SPA, Castano Primo,

SAWA Pumpentechnik AG, Degersheim,

Weir Specialty Pumps, Salt Lake City, UT

Pumps, other

Boerger Pumps, Chanhassen, MN

Elmridge Inc., Livonia, Michigan

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Hermetic-Pumpen GmbH, Gundelfingen

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

Nash, a Gardner Denver Product, Bentleyville, PA

Pumps, peristaltic

Allweiler GmbH, Radolfzell

Bioengineering Inc., Somerville, MA

Cole-Parmer, Vernon Hills, IL

Flowrox Oy, Lappeenranta

GRI Pumps, Bellville, OH

Sias, New Castle, DE

Pumps, pressure powered

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

Pumps, recessed impeller

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

GRI Pumps, Bellville, OH

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

Weir Specialty Pumps, Salt Lake City, UT

Pumps, sealless

ABEL GmbH & Co. KG, Buechen,

FLUX-GERAETE GMBH, Maulbronn

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Friatec AG Division Rheinhuetten Pumpen, Wiesbaden

GRI Pumps, Bellville, OH

ITT Äi Goulds Pumps, Seneca Falls, New York

Iwaki America, Holliston, MA

JLS International, Inc., Charlotte, North Carolina

LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

Richter Chemie-Technik GmbH, Kempen

Roth Pump, Rock Island, Illinois

SAWA Pumpentechnik AG, Degersheim,

Teikoku USA, Inc., Warminster, Pennsylvania

Pumps, sludge

ABEL GmbH & Co. KG, Buechen,

Blackhawk Technology Company, Glen Ellyn, Illinois

Boerger GmbH, Borken-Weseke

Boerger Pumps, Chanhassen, MN

Boerger Pumps Asia Pte. Ltd., Singapore

FELUWA Pumpen GmbH, Muerlenbach

Flowrox Oy, Lappeenranta

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@konline.com; web site: www.konline.com)

See our ad on page 137

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

NETZSCH Pumpen & Systeme GmbH, Waldkraiburg,

Newman Regency Group, Stafford, TX

SRS Crisafulli, Inc., Glendive, MT

Weir Specialty Pumps, Salt Lake City, UT

seepep GmbH, Botrop

seepep Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepep.net; web site: www.seepep.com)

Pumps, slurry

ABEL GmbH & Co. KG, Buechen,

BJM Pumps, LLC, Old Saybrook, CT

Blackhawk Technology Company, Glen Ellyn, Illinois

Boerger GmbH, Borken-Weseke

Boerger Pumps, Chanhassen, MN

Boerger Pumps Asia Pte. Ltd., Singapore

FELUWA Pumpen GmbH, Muerlenbach

Flowrox Oy, Lappeenranta

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Fluid Metering, Inc., Syosset, New York

GRI Pumps, Bellville, OH

GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@konline.com; web site: www.konline.com)

See our ad on page 137

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

Metsco Flow Control Inc, Vantaa, Finland,

Metsco Minerals Industries, Inc., York, PA

NETZSCH Pumpen & Systeme GmbH, Waldkraiburg,

SRS Crisafulli, Inc., Glendive, MT

Teikoku USA, Inc., Warminster, Pennsylvania

URACA GmbH & Co. KG, Sirchinger Str. 15, Bad Urach, 72574 (07125-133-0; FAX: 07125-133-202; e-mail: info@uraca.de; web site: www.uraca.com)

seepep GmbH, Botrop

seepep Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepep.net; web site: www.seepep.com)

Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
Roth Pump, Rock Island, Illinois

Pumps, water

Boerger Pumps, Chanhassen, MN
Cat Pumps, Minneapolis, MN
Dickow Pump Co., Marietta, GA
Fluid Metering, Inc., Syosset, New York
GRI Pumps, Bellville, OH
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Hammelmann Corp., Miamisburg, OH
Hermetic-Pumpen GmbH, Gundelfingen
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
NETZSCH Pumpen & Systeme GmbH, Waldkraiburg, National Pump Company, Glendale, AZ
SRS Crisafulli, Inc., Glendive, MT
URACA GmbH & Co. KG, Sirschinger Str. 15, Bad Urach, 72574 (07125-133-0; FAX: 07125-133-202; e-mail: info@uraca.de; web site: www.uraca.com)
seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

PUMPS, PROPORTIONING

Pumps, diaphragm (proportioning)

ABEL GmbH & Co. KG, Buechen, GRI Pumps, Bellville, OH
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
Walchem, IWAKI America, Inc., Holliston, MA

Pumps, metering

Allweiler GmbH, Radolfzell
Analytical Measurements, Chester, NJ
Cole-Parmer, Vernon Hills, IL
Fluid Metering, Inc., Syosset, New York
GRI Pumps, Bellville, OH
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)
JLS International, Inc., Charlotte, North Carolina
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)
Nordson SEALANT EQUIPMENT, Plymouth, MI
PDC Machines, Inc., Warmminster, PA
WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch
Walchem, IWAKI America, Inc., Holliston, MA
seepex GmbH, Bottrop
seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

Pumps, plunger

ABEL GmbH & Co. KG, Buechen, Blackhawk Technology Company, Glen Ellyn, Illinois
Cat Pumps, Minneapolis, MN
Fluid Metering, Inc., Syosset, New York

PUMPS, RECIPROCATING

Pumps, diaphragm (reciprocating)

ABEL GmbH & Co. KG, Buechen, Blackhawk Technology Company, Glen Ellyn, Illinois
Cat Pumps, Minneapolis, MN
Cole-Parmer, Vernon Hills, IL
FLUX-GERAETE GMBH, Maulbronn
GRI Pumps, Bellville, OH
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)
PFEIFFER VACUUM GMBH, Berliner Strasse 43, Asslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)
URACA GmbH & Co. KG, Sirschinger Str. 15, Bad Urach, 72574 (07125-133-0; FAX: 07125-133-202; e-mail: info@uraca.de; web site: www.uraca.com)

sera ProDos GmbH, Immenhausen,

Pumps, piston

ABEL GmbH & Co. KG, Buechen, Blackhawk Technology Company, Glen Ellyn, Illinois
Cat Pumps, Minneapolis, MN
Compressor Products International, Stafford, TX
EDWARDS US HEADQUARTERS, Sanborn, NY
Fluid Metering, Inc., Syosset, New York
Nordson SEALANT EQUIPMENT, Plymouth, MI
sera ProDos GmbH, Immenhausen,

Pumps, piston-diaphragm

ABEL GmbH & Co. KG, Buechen, FELUWA Pumpen GmbH, Muerlenbach
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

sera ProDos GmbH, Immenhausen,

Pumps, plunger

ABEL GmbH & Co. KG, Buechen, Hammelmann Corp., Miamisburg, OH
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
See our ad on page 137
LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

PUMPS, ROTARY

Pumps, gear

Allweiler GmbH, Radolfzell
Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
GRI Pumps, Bellville, OH
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

IGW - IG Wateeuw International nv, Headquarters, Oostkamp
JLS International, Inc., Charlotte, North Carolina
Maag Pump Systems AG, Oberglatt / ZH,
Nordson SEALANT EQUIPMENT, Plymouth, MI
SAWA Pumpentechnik AG, Degersheim,
WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch

Pumps, helical

Boerger Pumps, Chanhassen, MN

Pumps, lobe

Boerger GmbH, Borken-Weseke
Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA

Pumps, progressing cavity

Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
EDWARDS US HEADQUARTERS, Sanborn, NY
NETZSCH Pumpen & Systeme GmbH, Waldkraiburg, seepex GmbH, Bottrop
seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

Pumps, rotary helical gear

Boerger GmbH, Borken-Weseke
Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
IGW - IG Wateeuw International nv, Headquarters, Oostkamp
JLS International, Inc., Charlotte, North Carolina

Pumps, rotary herringbone

JLS International, Inc., Charlotte, North Carolina

Pumps, rotary liquid ring

EDWARDS US HEADQUARTERS, Sanborn, NY
GARO S.P.A., Monza (MB)
Nash, a Gardner Denver Product, Bentleyville, PA
Pompetravaini SPA, Castano Primo,

Pumps, rotary piston

Boerger GmbH, Borken-Weseke
Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA

Pumps, rotary positive displacement

Blackhawk Technology Company, Glen Ellyn, Illinois
Boerger GmbH, Borken-Weseke
Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
Cat Pumps, Minneapolis, MN
EDWARDS US HEADQUARTERS, Sanborn, NY
FLUX-GERAETE GMBH, Maulbronn
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)
KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4775; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.strainers.com)

Maag Pump Systems AG, Oberglatt / ZH,
Nordson SEALANT EQUIPMENT, Plymouth, MI
PFEIFFER VACUUM GMBH, Berliner Strasse 43, Asslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)

Pfeiffer Vacuum, Inc., Nashua, NH
WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch
seepex GmbH, Bottrop

Pumps, rotary sliding vane

Boerger Pumps, Chanhassen, MN
EDWARDS US HEADQUARTERS, Sanborn, NY

Pumps, screw

Boerger Pumps, Chanhassen, MN
Boerger Pumps Asia Pte. Ltd., Singapore
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
Newman Regency Group, Stafford, TX

PUMPS, SPECIAL MATERIALS

Pumps, ceramic

Fluid Metering, Inc., Syosset, New York
Friatec AG Division Rheinhuette Pumpen, Wiesbaden
3M Technical Ceramics, Kempten,

Leading technologies in vacuum and environmental engineering



- jet ejectors
- vacuum systems
- condensation systems
- jet and venturi scrubbers
- evaporation plants
- steam jet heaters
- jet mixers



Körting Hannover AG
30453 Hannover/Germany
Tel.: +49 511 2129-0
st@koerting.de

www.koerting.de

Circle 28 on p. 190 or go to adlinks.chemengonline.com/56204-28

WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch

Pumps, fiberglass-reinforced plastic

BJM Pumps, LLC, Old Saybrook, CT
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Pumps, graphite

Nantong Fareast Chemical Equipment Co. LTD, International Trading, Nantong

Pumps, nickel-based alloy

Dickow Pump Co., Marietta, GA
Flowerserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowerserve.com)

JLS International, Inc., Charlotte, North Carolina
seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

Pumps, nonmetallic

Flowerserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowerserve.com)

Iwaki America, Holliston, MA
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Pumps, other special materials

Boerger GmbH, Borken-Weseke
Boerger Pumps, Chanhassen, MN
FLUX-GERAETE GMBH, Maulbronn
Friatec AG Division Rheinhuetten Pumpen, Wiesbaden
GRI Pumps, Bellville, OH
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Hermetic-Pumpen GmbH, Gundelfingen
JLS International, Inc., Charlotte, North Carolina
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
NETZSCH Pumpen & Systeme GmbH, Waldkraiburg, seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

Pumps, plastic

BJM Pumps, LLC, Old Saybrook, CT
FLUX-GERAETE GMBH, Maulbronn
Flowerserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowerserve.com)

Fluid Metering, Inc., Sysset, New York
Friatec AG Division Rheinhuetten Pumpen, Wiesbaden
GRI Pumps, Bellville, OH
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
Mefiag, a CECO Environmental Company, Owosso, Michigan
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Pumps, stainless steel

BJM Pumps, LLC, Old Saybrook, CT
Boerger GmbH, Borken-Weseke
Boerger Pumps, Chanhassen, MN
Cat Pumps, Minneapolis, MN
Dickow Pump Co., Marietta, GA
FLUX-GERAETE GMBH, Maulbronn
Flowerserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowerserve.com)

Fluid Metering, Inc., Sysset, New York
GRI Pumps, Bellville, OH
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield, Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Hermetic-Pumpen GmbH, Gundelfingen
ITT, Ai Goulds Pumps, Seneca Falls, New York
JLS International, Inc., Charlotte, North Carolina
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

NETZSCH Pumpen & Systeme GmbH, Waldkraiburg, Nash, a Gardner Denver Product, Bentleyville, PA
National Pump Company, Glendave, AZ
Nordson SEALANT EQUIPMENT, Plymouth, MI
SAWA Pumpentechnik AG, Degersheim
URACA GmbH & Co. KG, Sirschinger Str. 15, Bad Urach, 72574 (07125-133-0; FAX: 07125-133-202; e-mail: info@uraca.de; web site: www.uraca.com)

WITTE PUMPS & TECHNOLOGY GmbH, 25436 Tornesch
Weir Specialty Pumps, Salt Lake City, UT
seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

Pumps, tantalum

JLS International, Inc., Charlotte, North Carolina

Pumps, titanium

Flowerserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowerserve.com)

Hermetic-Pumpen GmbH, Gundelfingen
ITT, Ai Goulds Pumps, Seneca Falls, New York
JLS International, Inc., Charlotte, North Carolina
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-695-3659; 937-864-7150; FAX: 937-864-7157; e-mail: sales@seepex.net; web site: www.seepex.com)

Pumps, zirconium

JLS International, Inc., Charlotte, North Carolina

PUMPS, VACUUM & EJECTOR

Aspiration systems

Advanced Cyclone Systems, S. A., Porto

Pumps, jet, sanitary

Elmridge Inc., Livonia, Michigan

Pumps, vacuum, dry

Busch LLC, Virginia Beach, VA
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
Escitex, Mesa, AZ
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
PFEIFFER VACUUM GMBH, Berliner Strasse 43, Aslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)

Schutte & Koerting, Treviso, PA
Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
GARO S.P.A., Monza (MB)
Nash Europe Ltd., Winsford, Cheshire
Nash, a Gardner Denver Product, Bentleyville, PA
Pompetravini SPA, Castano Primo,
Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Pumps, vacuum, liquid ring

Busch LLC, Virginia Beach, VA
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
GARO S.P.A., Monza (MB)
Nash Europe Ltd., Winsford, Cheshire
Nash, a Gardner Denver Product, Bentleyville, PA
Pompetravini SPA, Castano Primo,
Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Pumps, vacuum, once-through-oil

Busch LLC, Virginia Beach, VA

Pumps, vacuum, other

Busch LLC, Virginia Beach, VA
Compressor Products International, Stafford, TX
CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
FPZ Inc., Saukville, Wisconsin
Friatec AG Division Rheinhuetten Pumpen, Wiesbaden
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
See our ad on page 105

PFEIFFER VACUUM GMBH, Berliner Strasse 43, Aslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)

Pfeiffer Vacuum, Inc., Nashua, NH
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98
Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)
Vector Technologies Ltd., Milwaukee, WI

Pumps, vacuum, rotary piston

Aerzener Maschinenfabrik GmbH, Reherweg 28, D-31855, Aerzen, (+49 (0)5154 810; FAX: +49 (0)5154 81191; e-mail: info@aerzener.de; web site: www.aerzener.com)
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)

Steam jet ejectors

CROLL REYNOLDS
PROCESS VACUUM

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)
EDWARDS US HEADQUARTERS, Sanborn, NY
Elmridge Inc., Livonia, Michigan
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
See our ad on page 105

Nash Europe Ltd., Winsford, Cheshire
Nash, a Gardner Denver Product, Bentleyville, PA
Schutte & Koerting, Treviso, PA

Vacuum pumping systems

Busch LLC, Virginia Beach, VA
CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)
EDWARDS US HEADQUARTERS, Sanborn, NY
E-Vac Technologies, LLC, McMurray, PA
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89
ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)
KNF NEUBERGER, INC., USA, 2 Black Forest Rd., Trenton, New Jersey 08691-1810 (609-890-8600; e-mail: knfusa@knf.com; web site: www.knfusa.com)
KOERTING HANNOVER AD, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
See our ad on page 105

Nash Europe Ltd., Winsford, Cheshire
Pfeiffer Vacuum, Inc., Nashua, NH
Pompetravini SPA, Castano Primo,
Schutte & Koerting, Treviso, PA
Tuthill Vacuum & Blower Systems, 4840 W. Kearney Street, Springfield, MO 65803-8702 (800-825-6937; 417-865-8715; FAX: 417-865-2950; e-mail: vacuum@tuthill.com; web site: vacuum.tuthill.com)
Vector Technologies Ltd., Milwaukee, WI

PUMPS, VERTICAL & DEEP WELL

Pumps, dewatering, submersible

BJM Pumps, LLC, Old Saybrook, CT
SRS Crisafulli, Inc., Glendive, MT

Pumps, packless

Flowerserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowerserve.com)

Pumps, submersible

Allweiler GmbH, Radolfzell
BJM Pumps, LLC, Old Saybrook, CT
Boerger GmbH, Borken-Weseke

Boerger Pumps, Chanhassen, MN
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500,
 Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-
 6800; web site: www.flowserve.com)
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield,
 Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-
 mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

NETZSCH Pumpen & Systeme GmbH, Waldkraiburg,
 National Pump Company, Glendale, AZ
 SRS Crisafulli, Inc., Glendive, MT
 Weir Specialty Pumps, Salt Lake City, UT
 seepex GmbH, Bottrop

Pumps, sump

BJM Pumps, LLC, Old Saybrook, CT
 Blackhawk Technology Company, Glen Ellyn, Illinois
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500,
 Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-
 6800; web site: www.flowserve.com)
GORMAN-RUPP CO., 600 S. Airport Rd., Mansfield,
 Ohio 44903 (419-755-1011; FAX: 419-755-1251; e-
 mail: grsales@gormanrupp.com; web site: www.GRPumps.com)

Met-Pro Global Pump Solutions, a CECO Environmental
 Company, Tellford, Pennsylvania
 NETZSCH Pumpen & Systeme GmbH, Waldkraiburg,
 SRS Crisafulli, Inc., Glendive, MT

Pumps, vertical centrifugal

FLUX-GERAETE GMBH, Maulbronn
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500,
 Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-
 6800; web site: www.flowserve.com)

Friatec AG Division Rheinhuette Pumpen, Wiesbaden
 GRI Pumps, Belleville, OH
**HAYWARD FLOW CONTROL SYSTEMS, WEBSTER
 PUMPS**, One Hayward Industrial Drive, Clemmons,
 North Carolina 27012 (888-429-4635 USA/Canada; 888-
 429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com;
 web site: www.haywardflowcontrol.com)

Met-Pro Global Pump Solutions, a CECO Environmental
 Company, Tellford, Pennsylvania
 SAWA Pumpentechnik AG, Degersheim,
 SRS Crisafulli, Inc., Glendive, MT
 Weir Specialty Pumps, Salt Lake City, UT

Pumps, vertical inline

Boerger Pumps, Chanhassen, MN
 Greene, Tweed & Co. Ltd., Nottingham, Notts
 National Pump Company, Glendale, AZ
seepex Inc., 511 Speedway Dr., Enon, OH 45323 (800-
 695-3659; 937-864-7150; FAX: 937-864-7157; e-mail:
sales@seepex.net; web site: www.seepex.com)

Pumps, vertical turbine

National Pump Company, Glendale, AZ

SEALS, GASKETS & PACKING MATERIALS

Gaskets, fluoroplastic

PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205,
 P.O. Box 590, Stockton, California 95201-0590 (800-
 344-3246 USA & Canada; 209-943-6088; FAX: 209-
 943-0242; e-mail: sales@procoproducts.com; web
 site: www.procoproducts.com)

Gaskets, ring

W.L. Gore & Associates, Sealant Technologies, 201
 Airport Road, P.O. Box 1488, Elkton, Maryland 21921
 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Gaskets, rubber

Apple Rubber Products, Lancaster, NY
PROCO PRODUCTS, INC., 2431 N. Wigwam Dr. - 95205,
 P.O. Box 590, Stockton, California 95201-0590 (800-
 344-3246 USA & Canada; 209-943-6088; FAX: 209-
 943-0242; e-mail: sales@procoproducts.com; web
 site: www.procoproducts.com)

Gaskets, sheet

Topog-E Gasket Co., Tulsa, OK
W.L. Gore & Associates, Sealant Technologies, 201
 Airport Road, P.O. Box 1488, Elkton, Maryland 21921
 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Gaskets, silicone

Dymax Corp., Torrington, CT

Mechanical Seals and Sealing Material

Scenic Precise Element Inc., Kaohsiung City

Packings, braided

W.L. Gore & Associates, Sealant Technologies, 201
 Airport Road, P.O. Box 1488, Elkton, Maryland 21921
 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Packings, carbon

HOERBIGER Kompressortechnik Holding GmbH,
 Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0;
 FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com;
 web site: www.hoerbiger.com)

Packings, molded

Compressor Products International, Stafford, TX

Packings, plastic

HOERBIGER Kompressortechnik Holding GmbH,
 Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0;
 FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com;
 web site: www.hoerbiger.com)

Packings, pump

W.L. Gore & Associates, Sealant Technologies, 201
 Airport Road, P.O. Box 1488, Elkton, Maryland 21921
 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Packings, ring

Compressor Products International, Stafford, TX
HOERBIGER Kompressortechnik Holding GmbH,
 Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0;
 FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com;
 web site: www.hoerbiger.com)

Packings, structured

Sulzer Chemtech USA, Inc., Tulsa, OK

Packings, valve stem

W.L. Gore & Associates, Sealant Technologies, 201
 Airport Road, P.O. Box 1488, Elkton, Maryland 21921
 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Seals, balanced pressure

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-
 Flum-Str.37, Schopfheim, D-79650 (+49 7622 290;
 FAX: + 49 7622 29 213; e-mail: info@ekato.com; web
 site: www.ekato.com)

See our ad on page 151

Scenic Precise Element Inc., Kaohsiung City

Seals, bearing

AEGIS Bearing Protection Rings, Mechanic Falls, ME
EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-
 Flum-Str.37, Schopfheim, D-79650 (+49 7622 290;
 FAX: + 49 7622 29 213; e-mail: info@ekato.com; web
 site: www.ekato.com)

See our ad on page 151

Greene, Tweed & Co., Kulpville, PA
 Greene, Tweed & Co. Ltd., Nottingham, Notts
 3M Technical Ceramics, Kempten,
 Scenic Precise Element Inc., Kaohsiung City

Seals, bellows

Scenic Precise Element Inc., Kaohsiung City

Seals, diaphragm

WIKA Instrument, LP, Lawrenceville, GA

Seals, magnetic

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-
 Flum-Str.37, Schopfheim, D-79650 (+49 7622 290;
 FAX: + 49 7622 29 213; e-mail: info@ekato.com; web
 site: www.ekato.com)

See our ad on page 151

Seals, mechanical

Compressor Products International, Stafford, TX
EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-
 Flum-Str.37, Schopfheim, D-79650 (+49 7622 290;
 FAX: + 49 7622 29 213; e-mail: info@ekato.com; web
 site: www.ekato.com)

See our ad on page 151

3M Technical Ceramics, Kempten,
 Scenic Precise Element Inc., Kaohsiung City

Seals, noncontacting

Scenic Precise Element Inc., Kaohsiung City

Seals, shaft

Dresser-Rand, Corporate Headquarters, Houston, TX
 Greene, Tweed & Co., Kulpville, PA
 Greene, Tweed & Co. Ltd., Nottingham, Notts
 Scenic Precise Element Inc., Kaohsiung City

Seals, spring

Greene, Tweed & Co., Kulpville, PA

Greene, Tweed & Co. Ltd., Nottingham, Notts

STEAM TRAPS

Steam traps, disc

Armstrong International, Three Rivers, MI
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte,
 North Carolina 28273 (800-858-8727; 704-597-9070;
 FAX: 704-583-1610; web site: www.tlv.com)
 See our ad on page 98

Steam traps, float

Armstrong International, Three Rivers, MI
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte,
 North Carolina 28273 (800-858-8727; 704-597-9070;
 FAX: 704-583-1610; web site: www.tlv.com)
 See our ad on page 98

Steam traps, float & thermostatic

Armstrong International, Three Rivers, MI
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte,
 North Carolina 28273 (800-858-8727; 704-597-9070;
 FAX: 704-583-1610; web site: www.tlv.com)
 See our ad on page 98

Steam traps, inverted bucket

Armstrong International, Three Rivers, MI
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte,
 North Carolina 28273 (800-858-8727; 704-597-9070;
 FAX: 704-583-1610; web site: www.tlv.com)
 See our ad on page 98

Steam traps, orifice devices

CU SERVICES LLC, Elk Grove, IL

Steam traps, thermostatic

Armstrong International, Three Rivers, MI
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte,
 North Carolina 28273 (800-858-8727; 704-597-9070;
 FAX: 704-583-1610; web site: www.tlv.com)
 See our ad on page 98

TANKS & OTHER LIQUID STORAGE VESSELS

Bulk liquid storage services

Chattanooga Boiler and Tank Co., Chattanooga, TN
 Gilbert Industries, Sparta, MO
 TankLink, a wholly-owned subsidiary of Telular Corporation,
 Chicago, IL

Spheres, high-pressure gas

Cobey, Buffalo, New York

Tank cleaning & removal

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield,
 Massachusetts 01301 (800-235-0049; 413-772-0846;
 FAX: 413-772-6729; e-mail: sales@bete.com; web
 site: www.bete.com)

Tank fittings & accessories

Assmann Corp. of America, Garrett, IN
 BS & B Safety Systems, Inc., Tulsa, OK
 Fisher Tank Co., Chester, PA
 Micromold Products, Inc., Yonkers, New York

Tanks, PVC

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY,
 Owosso, Michigan

Tanks, air

Advance Boiler & Tank Co., West Allis, WI
 Team Industries, Inc., Kaukauna, WI
 Universal Tank & Fabrication, Dubuque, IA

Tanks, aluminum

Chattanooga Boiler and Tank Co., Chattanooga, TN

Tanks, bladder

Nier Systems Inc, Boca Raton, Florida
 Universal Tank & Fabrication, Dubuque, IA

Tanks, carbon steel

Advance Boiler & Tank Co., West Allis, WI
CHARLES ROSS & SON CO., 710 Old Willits Path, P.O.
 Box 12308, Hauppauge, New York 11788-0615 (800-
 243-7677; 631-234-0500; FAX: 631-234-0691; e-mail:
sales@mixers.com; web site: www.mixers.com)
 See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN
 Fisher Tank Co., Chester, PA
 Gilbert Industries, Sparta, MO
 Hoover Container Solutions, Houston, TX

Midwest Steel Company Inc, Houston, Texas
Niles Steel Tank, Ambler, PA
Samuel Pressure Vessel Group, Marinette, WI
Team Industries, Inc., Kaukauna, WI
Universal Tank & Fabrication, Dubuque, IA
Willbros Tank Company, Channelview, TX

Tanks, cryogenic

Gilbert Industries, Sparta, MO
Linde AG, Engineering Division, Pullach
Pope Scientific, Inc., Saukville, Wisconsin
SIAD Macchine Impianti, Bergamo

Tanks, cryogenic, vacuum jacketed

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Meyer Tool & Mfg., Inc., oaklawn, IL
Pope Scientific, Inc., Saukville, Wisconsin
SIAD Macchine Impianti, Bergamo

Tanks, custom fabricated

Advance Boiler & Tank Co., West Allis, WI
Assmann Corp. of America, Garrett, IN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN
Fisher Tank Co., Chester, PA
Gilbert Industries, Sparta, MO
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

INOX-TECH INC., Ste. Catherine
Koch Knight, LLC, East Canton, Ohio
Niles Steel Tank, Ambler, PA
Pope Scientific, Inc., Saukville, Wisconsin
Samuel Pressure Vessel Group, Marinette, WI
Team Industries, Inc., Kaukauna, WI
Universal Tank & Fabrication, Dubuque, IA
Willbros Tank Company, Channelview, TX
ZCL Composites Inc, Corrosion Division, Edmonton,

Tanks, dimple jacketed

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN
Pope Scientific, Inc., Saukville, Wisconsin
Team Industries, Inc., Kaukauna, WI

Tanks, dome roof

Fisher Tank Co., Chester, PA
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
Willbros Tank Company, Channelview, TX

Tanks, double containment

Assmann Corp. of America, Garrett, IN
Chattanooga Boiler and Tank Co., Chattanooga, TN
Fisher Tank Co., Chester, PA
Team Industries, Inc., Kaukauna, WI
Universal Tank & Fabrication, Dubuque, IA
Willbros Tank Company, Channelview, TX

Tanks, epoxy-fiberglass

Topp Industries, Inc., Rochester, IN

Tanks, epoxy lined

Advance Boiler & Tank Co., West Allis, WI
Chattanooga Boiler and Tank Co., Chattanooga, TN
Dudick Inc., Streetsboro, OH
Universal Tank & Fabrication, Dubuque, IA

Tanks, field-erected

Assmann Corp. of America, Garrett, IN
Fisher Tank Co., Chester, PA
Gilbert Industries, Sparta, MO
INOX-TECH INC., Ste. Catherine
Topp Industries, Inc., Rochester, IN
Willbros Tank Company, Channelview, TX

Tanks, floating roof

Fisher Tank Co., Chester, PA

Tanks, fluoroplastic

Micromold Products, Inc., Yonkers, New York

Tanks, galvanized

Hoover Container Solutions, Houston, TX
Willbros Tank Company, Channelview, TX

Tanks, glass lined

EquipNet, Inc., Canton, MA
Glasslined Technology, Inc., Greensboro, Georgia
Niles Steel Tank, Ambler, PA
Willbros Tank Company, Channelview, TX

Tanks, heated

Assmann Corp. of America, Garrett, IN
INOX-TECH INC., Ste. Catherine
Klopper-Therm GmbH & Co. KG, Dortmund
Pope Scientific, Inc., Saukville, Wisconsin
Willbros Tank Company, Channelview, TX

Tanks, internal floating deck

Willbros Tank Company, Channelview, TX

Tanks, mixing

Assmann Corp. of America, Garrett, IN
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN
EquipNet, Inc., Canton, MA
Gilbert Industries, Sparta, MO
Hoover Container Solutions, Houston, TX
LOTUS MIXERS INC., North Venice, FL
Metano IBC Services, Inc., Perrineville, NJ
Pope Scientific, Inc., Saukville, Wisconsin

Tanks, nickel or nickel alloys

Chattanooga Boiler and Tank Co., Chattanooga, TN
Team Industries, Inc., Kaukauna, WI
United Performance Metals, Houston, TX
Willbros Tank Company, Channelview, TX

Tanks, other

Fisher Tank Co., Chester, PA

Tanks, phenolic lined

Advance Boiler & Tank Co., West Allis, WI
Chattanooga Boiler and Tank Co., Chattanooga, TN

Tanks, polyethylene

Assmann Corp. of America, Garrett, IN
Delta Cooling Towers Inc., Roxbury Township, NJ
Hoover Container Solutions, Houston, TX
Metano IBC Services, Inc., Perrineville, NJ
Nier Systems Inc, Boca Raton, Florida

Tanks, polypropylene

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
Nier Systems Inc, Boca Raton, Florida
Singleton Corp., Cleveland, OH

Tanks, pressurized storage

Advance Boiler & Tank Co., West Allis, WI
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN
Gilbert Industries, Sparta, MO
Meyer Tool & Mfg., Inc., oaklawn, IL
Pope Scientific, Inc., Saukville, Wisconsin
Samuel Pressure Vessel Group, Marinette, WI
Universal Tank & Fabrication, Dubuque, IA

Tanks, rubber lined

Advance Boiler & Tank Co., West Allis, WI
Chattanooga Boiler and Tank Co., Chattanooga, TN
Universal Tank & Fabrication, Dubuque, IA

Tanks, stainless steel

Aaron Process Equipment Co., Bensenville, IL
Advance Boiler & Tank Co., West Allis, WI
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN
Enerquip, LLC, Medford, WI
Enerquip, LLC, Medford, WI
Fisher Tank Co., Chester, PA
Gilbert Industries, Sparta, MO
Hoover Container Solutions, Houston, TX
Midwest Steel Company Inc, Houston, Texas
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)

See our ad on page 24

Niles Steel Tank, Ambler, PA
Pope Scientific, Inc., Saukville, Wisconsin
Samuel Pressure Vessel Group, Marinette, WI

Team Industries, Inc., Kaukauna, WI
United Performance Metals, Houston, TX
Universal Tank & Fabrication, Dubuque, IA

Tanks, stainless steel, lined

Chattanooga Boiler and Tank Co., Chattanooga, TN
Pope Scientific, Inc., Saukville, Wisconsin
Team Industries, Inc., Kaukauna, WI

Tanks, tapered wall

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Tanks, vinyl ester - fiberglass

Topp Industries, Inc., Rochester, IN

Tanks, water

Assmann Corp. of America, Garrett, IN
Delta Cooling Towers Inc., Roxbury Township, NJ
Fisher Tank Co., Chester, PA
Nier Systems Inc, Boca Raton, Florida
Universal Tank & Fabrication, Dubuque, IA

TUBING & TUBE FITTINGS, METALLIC & NONMETALLIC

Coils, tubing

Arch City Steel, Fenton, Missouri

Tube fittings

GPC (Colder Products Company), St. Paul, Minnesota
CPI Wirecloth & Screens Inc, Pearland, TX
Dockweiler AG, Neustadt-Glewe
Fluid Line Products Inc., Willoughby, Ohio
NewAge Industries, Inc., Southampton, PA
Swagelok Co., Solon, OH
USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Viega, Wichita, Kansas

Tube sheets

Arch City Steel, Fenton, Missouri
United Performance Metals, Houston, TX

Tubing, boiler

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, condenser

Hudson Products Corp., Houston, TX
SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, evaporator

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, ferrous

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, finned

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

Hudson Products Corp., Houston, TX

Tubing, flexible metal

Hyspan Precision Prod. Inc., Chula Vista, CA
Thorburn Flex, Pointe-Claire Quebec,

Tubing, heat exchanger

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

Hudson Products Corp., Houston, TX

Klopper-Therm GmbH & Co. KG, Dortmund
SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS,
 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com; web site: www.hexoloy.com)

See our ad on page 167

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, high pressure

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, high temperature

NewAge Industries, Inc., Southampton, PA
 Regal Industries, Inc., Painesville, OH

Tubing, instrument

Arch City Steel, Fenton, Missouri

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, nonmetallic

Creative Pultrusions, Inc., Alum Bank, PA

SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS,
 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com; web site: www.hexoloy.com)

See our ad on page 167

Tubing, plastic

Associated Bag Company, Milwaukee, WI
 NewAge Industries, Inc., Southampton, PA

Tubing, pneumatic

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Tubing, refractory

SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS,
 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com; web site: www.hexoloy.com)

See our ad on page 167

Tubing, rubber

NewAge Industries, Inc., Southampton, PA

Tubing, seamless

Arch City Steel, Fenton, Missouri
 Dockweiler AG, Neustadt-Glewe

SANDVIK MATERIALS TECHNOLOGY, TUBULAR PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

TW Metals, Exton, PA

Tubing, silicone

NewAge Industries, Inc., Southampton, PA

Tubing, vacuum

Escitec, Mesa, AZ

Tubing, welded

Arch City Steel, Fenton, Missouri
 Dockweiler AG, Neustadt-Glewe
 TW Metals, Exton, PA

VALVES

Valve-locking devices

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 ((704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)

Conbraco Industries, Inc., Matthews, NC

Valve parts & fittings

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

Dueker GmbH & Co. KGaA, Laufach

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

HOERBIGER Kompressortechnik Holding GmbH,
 Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0; FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflow-control.com)

PBM Valves Inc., Irwin, PA

Valves, air

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 ((704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)

Conbraco Industries, Inc., Matthews, NC
 Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT

SAMSON Controls, Inc., Baytown, Texas

Valves, airlock flap-gate

DMN Incorporated, Arkansas
 Roto-Disc, Erlanger, KY

Valves, airlock rotary

AIRLANCO, Falls City, NE
 Buhler Inc., Minneapolis, MN
 Coperion GmbH, Weingarten, Wuert.,
 DMN Incorporated, Arkansas



GEMÜ[®]
VALVES, MEASUREMENT AND CONTROL SYSTEMS

Creating tangible solutions...

GEMÜ Valves features diaphragm valves, butterfly valves, angle seat and globe valves, lined metal valves, and multiport block valves.











3800 Camp Creek Parkway
 Building 2600 • Suite 120 • Atlanta, GA 30331
 Tel: 678-553-3400 • Fax: 678-553-3459 • info@gemu.com

www.gemu.com

Circle 26 on p. 190 or go to adlinks.chemengonline.com/56204-26

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
Prater-Sterling, Bollingbrook, IL

Valves, angle

ARCA Regler GmbH, Toenisvorst
BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)
Burkert Fluid Control Systems, Christian-Buerkert-Str. 13-17, Ingelfingen, 74653 (+49 7940 10-0; FAX: +49 7940 10-91 204; e-mail: info@burkert.com; web site: www.burkert.com)

Burkert Fluid Control Systems, Charlotte, NC
Buschjost GmbH, Bad Oeynhausen
CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
OHL Gutermuth Industrial Valves GmbH, Helmer-shaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-gutermuth.de; web site: www.ohl-gutermuth.de)
Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT
SAMSON Controls, Inc., Baytown, Texas

Valves, backflow

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)
Conbraco Industries, Inc., Matthews, NC

Valves, ball

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN
Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)
Chemline Plastics Limited
Collins Instrument Co Inc., P.O. Box 938, Angleton, TX 77516 (979-849-8266; FAX: 979 848-0783; e-mail: cic@collinsinst.com; web site: www.collinsinst.com)
Conbraco Industries, Inc., Matthews, NC
CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)
EDWARDS US HEADQUARTERS, Sanborn, NY
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
Floydne Controls Inc., Murray Hill, NJ
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)
ITT, Engineered Valves, Lancaster, PA
Inline Industries, Inc., 9056 Garvey Ave., Rosemead, California 91770 (800-568-8998; e-mail: info@ball-valve.com; web site: www.ballvalve.com)
Metso Flow Control Inc, Vantaa, Finland,
PBM Valves Inc., Irwin, PA
Richter Chemie-Technik GmbH, Kempen
SAMSON Controls, Inc., Baytown, Texas
Swagelok Co., Solon, OH
Viega, Wichita, Kansas
Walseley Industrial Group, Newport News, VA

Valves, bellows sealed

ARCA Regler GmbH, Toenisvorst
BIAR Sampling Systems, Gonzales, LA
CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)
Collins Instrument Co Inc., P.O. Box 938, Angleton, TX 77516 (979-849-8266; FAX: 979 848-0783; e-mail: cic@collinsinst.com; web site: www.collinsinst.com)
CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)
Richter Chemie-Technik GmbH, Kempen
SAMSON Controls, Inc., Baytown, Texas
Steri Technologies Inc., Bohemia, NY

Valves, butterfly

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)
CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)
Chemline Plastics Limited
Conbraco Industries, Inc., Matthews, NC
EDWARDS US HEADQUARTERS, Sanborn, NY
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

Henderson Industrial Specialties, Waterdown, ITT, Engineered Valves, Lancaster, PA
M. O. Industries, Whippany, NJ
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania
Metso Flow Control Inc, Vantaa, Finland,
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
See our ad on page 24

OHL Gutermuth Industrial Valves GmbH, Helmer-shaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-gutermuth.de; web site: www.ohl-gutermuth.de)

Posi-flate, St. Paul, MN
Richter Chemie-Technik GmbH, Kempen
SAMSON Controls, Inc., Baytown, Texas
Walseley Industrial Group, Newport News, VA

Valves, cage

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Valves, ceramic lined

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
SAMSON Controls, Inc., Baytown, Texas

Valves, check

CPI Wirecloth & Screens Inc, Pearland, TX
CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
Fluid Line Products Inc., Willoughby, Ohio
GRl Pumps, Bellville, OH
HOERBIGER Kompressortechnik Holding GmbH, Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0; FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)
Henderson Industrial Specialties, Waterdown, ITT, Engineered Valves, Lancaster, PA
KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4775; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.strainers.com)

Oosina, Edgewood, NY
Schutte & Koerting, Treviso, PA
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
See our ad on page 98

Walseley Industrial Group, Newport News, VA

Valves, control, electric

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN
AUMA RIESTER GMBH & CO. KG, Aumastrasse 1, P.O. Box 1362, Muelheim, 79379 (+49 7631 8090; FAX: +49 7631 809250; e-mail: riester@auma.com; web site: www.auma.com)
Auma Actuators Inc., Cannonsburg, PA

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

Buschjost GmbH, Bad Oeynhausen
CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)
Chemline Plastics Limited
Collins Instrument Co Inc., P.O. Box 938, Angleton, TX 77516 (979-849-8266; FAX: 979 848-0783; e-mail: cic@collinsinst.com; web site: www.collinsinst.com)
CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)
Henderson Industrial Specialties, Waterdown, RF Valves, Inc., Hanover, MD
SAMSON Controls, Inc., Baytown, Texas

Valves, control, hydraulic

Collins Instrument Co Inc., P.O. Box 938, Angleton, TX 77516 (979-849-8266; FAX: 979 848-0783; e-mail: cic@collinsinst.com; web site: www.collinsinst.com)
CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)
Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT
RF Valves, Inc., Hanover, MD
SAMSON Controls, Inc., Baytown, Texas

Valves, control, pneumatic

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN
ARCA Regler GmbH, Toenisvorst
Armstrong International, Three Rivers, MI
BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)
BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9336 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infocentral@badgermeter.com; web site: www.badgermeter.com)
Burkert Fluid Control Systems, Charlotte, NC
Burkert Fluid Control Systems, Christian-Buerkert-Str. 13-17, Ingelfingen, 74653 (+49 7940 10-0; FAX: +49 7940 10-91 204; e-mail: info@burkert.com; web site: www.burkert.com)
CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)
Chemline Plastics Limited
CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
Fluorox Oy, Lappeenranta

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

Henderson Industrial Specialties, Waterdown, LA-MAN Corp., Mazeppa, MN
Metso Flow Control Inc, Vantaa, Finland,
Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT
Posi-flate, St. Paul, MN
RF Valves, Inc., Hanover, MD
Roto-Disc, Erlanger, KY
SAMSON Controls, Inc., Baytown, Texas
Walseley Industrial Group, Newport News, VA

Valves, control, regulator

CPI Wirecloth & Screens Inc, Pearland, TX
CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
SAMSON Controls, Inc., Baytown, Texas

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
See our ad on page 98

Valves, control, solenoid

Burkert Fluid Control Systems, Christian-Buerkert-Str. 13-17, Ingelfingen, 74653 (+49 7940 10-0; FAX: +49 7940 10-91 204; e-mail: info@burkert.com; web site: www.burkert.com)

Burkert Fluid Control Systems, Charlotte, NC
Buschjost GmbH, Bad Oeynhausen

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT

SAMSON Controls, Inc., Baytown, Texas

Valves, cryogenic

Badger Meter Europa GmbH, Neuffen

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infocentral@badgermeter.com; web site: www.badgermeter.com)

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Floidyne Controls Inc., Murray Hill, NJ

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

SAMSON Controls, Inc., Baytown, Texas

Valves, diaphragm

Burkert Fluid Control Systems, Christian-Buerkert-Str. 13-17, Ingelfingen, 74653 (+49 7940 10-0; FAX: +49 7940 10-91 204; e-mail: info@burkert.com; web site: www.burkert.com)

Burkert Fluid Control Systems, Charlotte, NC
Buschjost GmbH, Bad Oeynhausen

Chemline Plastics Limited

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Georg Fischer Piping Systems Ltd., Schaffhausen 8201 (41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: ps@georgfischer.com; web site: www.gfps.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

ITT, Engineered Valves, Lancaster, PA

Kemutec Group, Inc., Bristol, PA

Midwesco Filter Resources, Inc., Winchester, VA

RF Valves, Inc., Hanover, MD

Richter Chemie-Technik GmbH, Kempen

SAMSON Controls, Inc., Baytown, Texas

Valves, diverter

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN

ARCA Regler GmbH, Teonisvorst

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

DMN Incorporated, Arkansas

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Floidyne Controls Inc., Murray Hill, NJ

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

JLS International, Inc., Charlotte, North Carolina

Maag Pump Systems AG, Oberglatt / ZH,

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8800; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

OHL Guterath Industrial Valves GmbH, Helmer-shaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterath.de; web site: www.ohl-guterath.de)

RF Valves, Inc., Hanover, MD

Roto-Disc, Erlanger, KY

SAMSON Controls, Inc., Baytown, Texas

Vortex, Salina, Kansas

Valves, double block & bleed

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

OHL Guterath Industrial Valves GmbH, Helmer-shaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterath.de; web site: www.ohl-guterath.de)

SAMSON Controls, Inc., Baytown, Texas

Swagelok Co., Solon, OH

USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1088; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Wolseley Industrial Group, Newport News, VA

Valves, electrically heated

Kloepfer-Therm GmbH & Co. KG, Dortmund

Valves, flush-bottom tank

Dueker GmbH & Co. KGaA, Laufach

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

JLS International, Inc., Charlotte, North Carolina

PBM Valves Inc., Irwin, PA

Valves, gate

Chemline Plastics Limited

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Coperion GmbH, Weingarten, Wuert.,

Vortex, Salina, Kansas

Wolseley Industrial Group, Newport News, VA

Valves, glass

De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: glass@qvf.de; web site: www.qvf.com)

Valves, glass lined

Dueker GmbH & Co. KGaA, Laufach

Glasslined Technology, Inc., Greensboro, Georgia

ITT, Engineered Valves, Lancaster, PA

Valves, globe

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN

ARCA Regler GmbH, Teonisvorst

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Metsco Flow Control Inc., Vantaa, Finland

SAMSON Controls, Inc., Baytown, Texas

Valves, heat actuated, fail safe

OHL Guterath Industrial Valves GmbH, Helmer-shaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterath.de; web site: www.ohl-guterath.de)

Valves, high pressure

ARCA Regler GmbH, Teonisvorst

Badger Meter Europa GmbH, Neuffen

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infocentral@badgermeter.com; web site: www.badgermeter.com)

CPI Wirecloth & Screens Inc., Pearlard, TX

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Coperion GmbH, Weingarten, Wuert.,

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Floidyne Controls Inc., Murray Hill, NJ

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Fluid Line Products Inc., Willoughby, Ohio

HOERBIGER Kompressortechnik Holding GmbH, Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0; FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)

JLS International, Inc., Charlotte, North Carolina

Metsco Flow Control Inc., Vantaa, Finland,

Nordson SEALANT EQUIPMENT, Plymouth, MI

Posi-flate, St. Paul, MN

RF Valves, Inc., Hanover, MD

Roto-Disc, Erlanger, KY

SAMSON Controls, Inc., Baytown, Texas

Schutte & Koerting, Trevose, PA

Sentry Equipment Corp., 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Swagelok Co., Solon, OH

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

Vortex, Salina, Kansas

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Valves, high temperature

ARCA Regler GmbH, Teonisvorst

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

Buschjost GmbH, Bad Oeynhausen

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

DMN Incorporated, Arkansas

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

HOERBIGER Kompressortechnik Holding GmbH, Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0; FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)

JLS International, Inc., Charlotte, North Carolina

Metsco Flow Control Inc., Vantaa, Finland,

Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT

Roto-Disc, Erlanger, KY

SAMSON Controls, Inc., Baytown, Texas

Swagelok Co., Solon, OH

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

Vortex, Salina, Kansas

Valves, hopper

Posi-flate, St. Paul, MN

RF Valves, Inc., Hanover, MD

Roto-Disc, Erlanger, KY

Valves, iris

Kemutec Group, Inc., Bristol, PA

Vortex, Salina, Kansas

Valves, jacketed

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)

Conbraco Industries, Inc., Matthews, NC

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

JLS International, Inc., Charlotte, North Carolina

OHL Guterath Industrial Valves GmbH, Helmer-shaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterath.de; web site: www.ohl-guterath.de)

Roto-Disc, Erlanger, KY

SAMSON Controls, Inc., Baytown, Texas

Vortex, Salina, Kansas

Valves, knife-gate

ITT, Engineered Valves, Lancaster, PA

Vortex, Salina, Kansas

Valves, metal seated

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

JLS International, Inc., Charlotte, North Carolina

OHL Guterthum Industrial Valves GmbH, Helmershauser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterthum.de; web site: www.ohl-guterthum.de)

Posi-flate, St. Paul, MN
Roto-Disc, Erlanger, KY
SAMSON Controls, Inc., Baytown, Texas
Wolseley Industrial Group, Newport News, VA

Valves, mixing

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN

ARCA Regler GmbH, Teisnavorst
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Nordson SEALANT EQUIPMENT, Plymouth, MI
OHL Guterthum Industrial Valves GmbH, Helmershauser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterthum.de; web site: www.ohl-guterthum.de)

PBM Valves Inc., Irwin, PA
SAMSON Controls, Inc., Baytown, Texas

Valves, motor operated

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9902; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Flodyne Controls Inc., Murray Hill, NJ
Flowserve Corp., 1900 S. Saunders St, Raleigh, North Carolina 27601 (919-831-3200; web site: www.flowserve.com)

PBM Valves Inc., Irwin, PA
SAMSON Controls, Inc., Baytown, Texas

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
See our ad on page 98

Valves, multiport

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Flodyne Controls Inc., Murray Hill, NJ
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

Fluid Line Products Inc., Willoughby, Ohio

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

Hilliard Corp., Elmira, NY
JLS International, Inc., Charlotte, North Carolina
KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4775; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.strainers.com)

PBM Valves Inc., Irwin, PA
SAMSON Controls, Inc., Baytown, Texas
Vortex, Salina, Kansas

Valves, needle

CPI Wirecloth & Screens Inc., Pearlard, TX
Fluid Line Products Inc., Willoughby, Ohio
SAMSON Controls, Inc., Baytown, Texas
Swagelok Co., Solon, OH

Valves, nuclear

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

ITT, Engineered Valves, Lancaster, PA

Valves, other

BIAR Sampling Systems, Gonzales, LA
Buschjost GmbH, Bad Oeynhaus

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

RF Valves, Inc., Hanover, MD
SAMSON Controls, Inc., Baytown, Texas

Valves, packless

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

SAMSON Controls, Inc., Baytown, Texas

Valves, pilot operated

Buschjost GmbH, Bad Oeynhaus

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

Flodyne Controls Inc., Murray Hill, NJ
Fluid Line Products Inc., Willoughby, Ohio
Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT

SAMSON Controls, Inc., Baytown, Texas

Valves, pinch

Florox Oy, Lappeenranta

Osoina, Edgewood, NY

RF Valves, Inc., Hanover, MD

SAMSON Controls, Inc., Baytown, Texas

Valves, plastic

Chemline Plastics Limited

Collins Instrument Co Inc., P.O. Box 938, Angleton, TX 77516 (979-849-8266; FAX: 979-848-0783; e-mail: cic@collinsinst.com; web site: www.collinsinst.com/)

CORZAN INDUSTRIAL SYSTEMS, 9911 Brecksville Road, Cleveland, Ohio 44141 (888-234-2436; 216-447-7397; FAX: 216-447-6211; e-mail: Corzan@lubrizol.com; web site: www.corzancpvc.com)

See our ad on page 97

Georg Fischer Piping Systems Ltd., Schaffhausen 8201 (41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.ps@georgfischer.com; web site: www.gfps.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)
Met-Pro Global Pump Solutions, a CECCO Environmental Company, Telford, Pennsylvania

Valves, plastic lined

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

ITT, Engineered Valves, Lancaster, PA
Richter Chemie-Technik GmbH, Kempen
SAMSON Controls, Inc., Baytown, Texas

Valves, plug

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

Hilliard Corp., Elmira, NY

JLS International, Inc., Charlotte, North Carolina

KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4775; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.strainers.com)

SAMSON Controls, Inc., Baytown, Texas
Schutte & Koerting, Treviso, PA

Valves, pneumatic

AA S&K AUTOMATION, Valves, Automated Valves and Control Valves, Plymouth, MN

Burkert Fluid Control Systems, Christian-Buerkert-Str. 13-17, Ingelfingen, 74653 (+49 7940 10-0; FAX: +49 7940 10-91 204; e-mail: info@burkert.com; web site: www.burkert.com)

Burkert Fluid Control Systems, Charlotte, NC
CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

DMN Incorporated, Arkansas
Dueker GmbH & Co. KGaA, Laufach
EDWARDS US HEADQUARTERS, Sanborn, NY

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flodyne Controls Inc., Murray Hill, NJ
Flowrox Oy, Lappeenranta
LA-MAN Corp., Mapeppa, MN
PBM Valves Inc., Irwin, PA
Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT

RF Valves, Inc., Hanover, MD
SAMSON Controls, Inc., Baytown, Texas

Valves, pressure reducing

Armstrong International, Three Rivers, MI

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

Chemline Plastics Limited
CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Oseco, Broken Arrow, OK

SAMSON Controls, Inc., Baytown, Texas
Sentry Equipment Corp., 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
See our ad on page 98

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Valves, proportional

Chemline Plastics Limited

SAMSON Controls, Inc., Baytown, Texas

Valves, pump protection

EDWARDS US HEADQUARTERS, Sanborn, NY

Valves, quick closing

Flodyne Controls Inc., Murray Hill, NJ

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

SAMSON Controls, Inc., Baytown, Texas
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Valves, ram

JLS International, Inc., Charlotte, North Carolina

Valves, recirculation, automatic

CONVAL, INC., 265 Field Road, Somers, Connecticut 06071 (860-749-0761; FAX: 860-763-3557; e-mail: mhendrick@conval.com; web site: www.conval.com)

Valves, relief

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

Chemline Plastics Limited

EDWARDS US HEADQUARTERS, Sanborn, NY

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)

Valves, rubber lined

Flowrox Oy, Lappeenranta
ITT, Engineered Valves, Lancaster, PA
SAMSON Controls, Inc., Baytown, Texas

Valves, safety

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)

Conbraco Industries, Inc., Matthews, NC
Metsco Flow Control Inc, Vantaa, Finland,
Oseco, Broken Arrow, OK
Parker Hannifin Corp., Parker Fluid Control Division, New Britain, CT

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)

Richter Chemie-Technik GmbH, Kempen

Valves, sampling

BIAR Sampling Systems, Gonzales, LA
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

JLS International, Inc., Charlotte, North Carolina
JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

SAMSON Controls, Inc., Baytown, Texas
Sentry Equipment Corp., 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Swagelok Co., Solon, OH

Valves, slide

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: infoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Vortex, Salina, Kansas

Valves, slurry

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)

Conbraco Industries, Inc., Matthews, NC

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: infoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowrox Oy, Lappeenranta
ITT, Engineered Valves, Lancaster, PA
Posi-flate, St. Paul, MN

RF Valves, Inc., Hanover, MD
Roto-Disc, Erlanger, KY
SAMSON Controls, Inc., Baytown, Texas

Valves, tank blanketing

SAMSON Controls, Inc., Baytown, Texas

Valves, tank venting

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

JLS International, Inc., Charlotte, North Carolina
Oseco, Broken Arrow, OK

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)

Valves, titanium

Apollo Valves, 701 Matthews Mint Hill Road, Matthews, North Carolina 28105 (704) 841-6000; FAX: (704) 841-6021; web site: www.apollovalves.com)

Conbraco Industries, Inc., Matthews, NC

Flodyne Controls Inc., Murray Hill, NJ
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

JLS International, Inc., Charlotte, North Carolina
OHL Guterath Industrial Valves GmbH, Helmershaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterath.de; web site: www.ohl-guterath.de)

PBM Valves Inc., Irwin, PA

SAMSON Controls, Inc., Baytown, Texas

Valves, vacuum

EDWARDS US HEADQUARTERS, Sanborn, NY
Equilibar Precision Pressure Control, North Carolina
PFEIFFER VACUUM GMBH, Berliner Strasse 43, Asslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)

Pfeiffer Vacuum, Inc., Nashua, NH
Posi-flate, St. Paul, MN
RF Valves, Inc., Hanover, MD
Roto-Disc, Erlanger, KY
SAMSON Controls, Inc., Baytown, Texas

Valves, vacuum relief

EDWARDS US HEADQUARTERS, Sanborn, NY
Oseco, Broken Arrow, OK

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)

Valves, vent, low pressure

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

JLS International, Inc., Charlotte, North Carolina

Oseco, Broken Arrow, OK
REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)

Valves, zirconium

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

JLS International, Inc., Charlotte, North Carolina
OHL Guterath Industrial Valves GmbH, Helmershaeuser Strasse 9 + 12, Altenstadt 63674 (+49 6047 8006 0; FAX: +49 6047 8006 29; e-mail: og@ohl-guterath.de; web site: www.ohl-guterath.de)

SAMSON Controls, Inc., Baytown, Texas

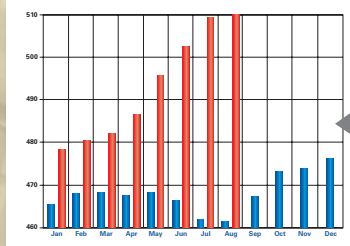
Get Chemical Engineering's Plant Cost Index to improve plant cost estimates...and delivered in advance of the print edition!



For more than 40 years, chemical process industries professionals- engineers, manager and technicians, have used Chemical Engineering's Plant Cost Index to adjust process plant construction costs from one period to another.

This database includes all annual archives (1947 to present) and monthly data archives (1970 to present). Instead of waiting more than two weeks for the print or online version of Chemical Engineering to arrive, subscribers can access new data as soon as it's calculated.

	Sep '06 Prelim.	Aug '06 Final	Sep '05 Final
CE Index	513.1	510.0	467.2
Equipment	606.5	602.3	541.2
Heat Exchanges and Tanks	565.1	560.9	509.2
Process Machinery	559.6	556.2	521.7
Pipe, valves and fittings	734.7	731.7	620.8
Process Instruments	441.4	437.2	379.5
Pumps and Compressions	788.9	788.3	756.3
Electrical equipment	418.9	414.2	374.6
Structural supports	643.7	637.7	579.3
Construction Labor	314.7	312.9	309.1
Buildings	476.9	475.2	444.7
Engineering Supervision	350.7	351.9	346.9



Resources included with Chemical Engineering's Plant Cost Index:

- Electronic notification of monthly updates as soon as they are available
- All annual data archives (1947 to present)
- Monthly data archives (1970 to present)
- Option to download in Excel format

Subscribe today at www.chemengonline.com/pci

2

SOLIDS

HANDLING

- 114 Bins & other dry storage equipment**
- 115 Bulk carriers, loading & unloading equipment**
- 115 Bulk chemical carriers**
- 115 Coating, forming & agglomeration equipment**
- 116 Conveyors & elevators for bulk materials**
- 117 Lifting equipment**
- 117 Packaging containers**
- 117 Packaging equipment**
- 117 Solids handling equipment & systems, other**
- 118 Weighing, feeding & proportioning equipment**

BINS & OTHER DRY STORAGE EQUIPMENT

Bin activators

Acrison Inc., Moonachie, NJ
 Brabender Technologie GmbH & Co. KG, Duisburg
 Dynamic Air Inc., St. Paul, MN
 Geroldinger GmbH, Sigharting,
 Kinergy Corp., Louisville, KY
 Martin Engineering, Neponset, IL
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes,
 Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-
 mail: sales@nol-tec.com; web site: www.nol-tec.com)
 Vibra Screw Inc., Totowa, NJ

Bin inserts

JENIKE & JOHANSON INC., 400 Business Park Dr.,
 Tyngsboro, Massachusetts 01879-1077 (978-649-
 3300; FAX: 978-649-3399; e-mail: info@jenike.com;
 web site: www.jenike.com)

Bins

Acrison Inc., Moonachie, NJ

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O.
 Box 12308, Hauppauge, New York 11788-0615 (800-
 243-7677; 631-234-0500; FAX: 631-234-0691; e-mail:
 sales@mixers.com; web site: www.mixers.com)

— See our ad on page 6

Geroldinger GmbH, Sigharting,

JENIKE & JOHANSON INC., 400 Business Park Dr.,
 Tyngsboro, Massachusetts 01879-1077 (978-649-
 3300; FAX: 978-649-3399; e-mail: info@jenike.com;
 web site: www.jenike.com)

MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604
 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@
 mueller-gmbh.com; web site: www.mueller-gmbh.com)

— See our ad on page 24

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK
MATERIALS TECHNOLOGY DEUTSCHLAND GMBH,
 Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-
 5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@
 sandvik.com; web site: www.processsystems.
 sandvik.com)

Vibra Screw Inc., Totowa, NJ

Bins, weighing

Bascale Company, Inc., Houston, TX

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes,
 Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-
 mail: sales@nol-tec.com; web site: www.nol-tec.com)

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK
MATERIALS TECHNOLOGY DEUTSCHLAND GMBH,
 Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-
 5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@
 sandvik.com; web site: www.processsystems.
 sandvik.com)

Schenck Process GmbH, Darmstadt
 Vibra Screw Inc., Totowa, NJ

Gates, hopper

JENIKE & JOHANSON INC., 400 Business Park Dr.,
 Tyngsboro, Massachusetts 01879-1077 (978-649-
 3300; FAX: 978-649-3399; e-mail: info@jenike.com;
 web site: www.jenike.com)

Vibra Screw Inc., Totowa, NJ

Hoppers

Acrison Inc., Moonachie, NJ
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O.
 Box 12308, Hauppauge, New York 11788-0615 (800-
 243-7677; 631-234-0500; FAX: 631-234-0691; e-mail:
 sales@mixers.com; web site: www.mixers.com)

— See our ad on page 6

FEECO International, Inc., Green Bay, WI

Filtera-Systems Co., Farmington Hills, Michigan
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)

— See our ad on page 3

Geroldinger GmbH, Sigharting,
JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

M. O. Industries, Whippamy, NJ
 Martin Vibration Systems, Marine City, MI
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (-49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)

— See our ad on page 24

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

Vibra Screw Inc., Totowa, NJ

Hoppers, weighing

Acron Inc., Moonachie, NJ
 CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)

Geroldinger GmbH, Sigharting,
 Martin Vibration Systems, Marine City, MI
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

Schenck Process GmbH, Darmstadt
 Vibra Screw Inc., Totowa, NJ

Silos

Aumund Fordertechnik GmbH, Rheinberg
 Geroldinger GmbH, Sigharting,
 Gilbert Industries, Sparta, MO
 INOX-TECH INC., St. Catherine

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (-49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)

— See our ad on page 24

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

BULK CARRIERS, LOADING & UNLOADING EQUIPMENT

Dumpers

FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)

— See our ad on page 3

M. O. Industries, Whippamy, NJ
 Material Transfer & Storage Inc., Allegan, MI

Lift tables

Presto Lifts Inc., Norton, MA
 Southworth Products Corp., Portland, ME

Lift trucks

M. O. Industries, Whippamy, NJ
 Presto Lifts Inc., Norton, MA
 Southworth Products Corp., Portland, ME

Lift trucks, explosion proof

M. O. Industries, Whippamy, NJ

Loaders, car

Buhler Inc., Minneapolis, MN
LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)

Pallet trucks

M. O. Industries, Whippamy, NJ
 Presto Lifts Inc., Norton, MA
 Southworth Products Corp., Portland, ME

Railroad car spotter, indexer, or positioner

Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

Unloaders, barge

Buhler Inc., Minneapolis, MN
 Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania
 Vector Technologies Ltd., Milwaukee, WI

Unloaders, bulk bag

AIRLANCO, Falls City, NE
BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)

Bascale Company, Inc., Houston, TX
 Brabender Technologie GmbH & Co. KG, Duisburg
 CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)

Dynamic Air Inc., St. Paul, MN
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)

— See our ad on page 3

LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)
 Material Transfer & Storage Inc., Allegan, MI
NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Schenck Process, Kansas City, MO

Schenck Process, Kansas City, MO

Unloaders, hopper car

CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)
 Kinergy Corp., Louisville, KY
 Martin Vibration Systems, Marine City, MI

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Vector Technologies Ltd., Milwaukee, WI

Unloaders, other

Aumund Fordertechnik GmbH, Rheinberg
 Buhler Inc., Minneapolis, MN
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)

— See our ad on page 3

Omni-Lift, Inc., Salt Lake City, UT

Unloaders, tank car
LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)
 Vector Technologies Ltd., Milwaukee, WI

Unloaders, tank truck

Buhler Inc., Minneapolis, MN
 CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)

BULK CHEMICAL CARRIERS

Trucks

Diversified Toll Services, Cheshire, Connecticut

COATING, FORMING & AGGLOMERATION EQUIPMENT

Agglomerators

AMANDUS KAHL GMBH & CO. KG, DIESELSTR. 5-9, REINBEK 21465 (49-40-72-77100; FAX: 49-40-72-771100; E-MAIL: INFO@AMANDUS-KAHL-GROUP.DE; WEB SITE: WWW.AKAHL.DE)
AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Alexanderwerk AG, Remscheid
 Bepex International LLC, Minneapolis, MN
 FECCO International, Inc., Green Bay, WI

Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania
 Hosokawa Micron B.V., Mixing, Drying & Agglomeration, Doetinchem,
 Ludman Industries, Milwaukee, WI
 Mars Mineral, Mars, PA

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

— See our ad on page 135

Briquetting systems

Bepex International LLC, Minneapolis, MN
 FECCO International, Inc., Green Bay, WI
 Ludman Industries, Milwaukee, WI
 Security Engineered Machinery, Westboro, MA

Calenders

Davis-Standard, LLC, Pawcatuck, CT
 Thermal Spray Solutions, Inc., Chesapeake, Virginia

Coaters & coating machinery

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

Bepex International LLC, Minneapolis, MN
 Davis-Standard, LLC, Pawcatuck, CT
 Gebrueder Loedige Maschinenbau GmbH, Paderborn
 Thermal Spray Solutions, Inc., Chesapeake, Virginia

Compactors

AMANDUS KAHL GMBH & CO. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-77100; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)

Alexanderwerk AG, Remscheid
 Bepex International LLC, Minneapolis, MN
 Ludman Industries, Milwaukee, WI
 Prater-Strerling, Bollingbrook, IL

Densifiers

Bepex International LLC, Minneapolis, MN
 Mars Mineral, Mars, PA

Extruders

B & P Process Equipment, Saginaw, MI
BUSS ChemTech AG, Pratteln 1
 Bepex International LLC, Minneapolis, MN
 Davis-Standard, LLC, Pawcatuck, CT

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

Granulators & granulating mills

AMANDUS KAHL GMBH & CO. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-77100; FAX: +49 8152 9392-91; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)

AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Alexanderwerk AG, Remscheid
 Bepex International LLC, Minneapolis, MN
 FECCO International, Inc., Green Bay, WI
 Gebrueder Loedige Maschinenbau GmbH, Paderborn
 Herbold Meckesheim USA, Resource Recycling Systems Inc., Slatersville, RI

Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania
 Kemutec Group, Inc., Bristol, PA
 Ludman Industries, Milwaukee, WI
 Modern Process Equipment, Inc., Chicago, IL

NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

— See our ad on page 135

Pelletizers

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)

BUSS ChemTech AG, Pratteln 1
Bepex International LLC, Minneapolis, MN
Davis-Standard, LLC, Pawcatuck, CT
FEECO International, Inc., Green Bay, WI
Maag Pump Systems AG, Oberglatt / ZH,
Mars Mineral, Mars, PA

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

CONVEYORS & ELEVATORS FOR BULK MATERIALS

Chutes

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

Conveyor accessories

LEWCO, Inc., Sandusky, OH
Martin Engineering, Neponset, IL
RPS Engineering, Inc., Elgin, IL
Sweet Manufacturing Company, Springfield, OH

Conveyor belting

AWT World Trade Inc., Chicago, IL
BERNDORF BAND GMBH, Leobersdorferstr. 26, Berndorf, 2560 (43-2672-800-0; FAX: 43-2672-84176; e-mail: band@berndorf.at; web site: www.berndorf-band.at)
LEWCO, Inc., Sandusky, OH
Omni-Lift, Inc., Salt Lake City, UT

Conveyors, apron

Aumund Fordertechnik GmbH, Rheinberg
Dematic Corp., Grand Rapids, MI
Stedman, Aurora, IN

Conveyors, belt

ABI LTD., Concord,
AWT World Trade Inc., Chicago, IL
Aumund Fordertechnik GmbH, Rheinberg
BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 2400; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)
BERNDORF BAND GMBH, Leobersdorferstr. 26, Berndorf, 2560 (43-2672-800-0; FAX: 43-2672-84176; e-mail: band@berndorf.at; web site: www.berndorf-band.at)
Berthold Technologies GmbH & Co.KG, Bad Wildbad
FEECO International, Inc., Green Bay, WI
Industrial Magnetics, Inc., Boyne City, Michigan
Magnetic Products, Inc., Highland, MI
Martin Engineering, Neponset, IL
Omni-Lift, Inc., Salt Lake City, UT
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.sp@sd@sandvik.com; web site: www.processsystems.sandvik.com)

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

Stedman, Aurora, IN
Sweet Manufacturing Company, Springfield, OH
Union Special, LLC, Huntley, IL
Vibra Screw Inc., Totowa, NJ

Conveyors, bucket

Aumund Fordertechnik GmbH, Rheinberg
Omni-Lift, Inc., Salt Lake City, UT

Conveyors, cooling

ABI LTD., Concord,
SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

Conveyors, drag

Aumund Fordertechnik GmbH, Rheinberg
Buhler Inc., Minneapolis, MN
Filtra-Systems Co., Farmington Hills, Michigan
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
— See our ad on page 3

LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)
Modern Process Equipment, Inc., Chicago, IL
Sweet Manufacturing Company, Springfield, OH

Conveyors, flexible

FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
— See our ad on page 3

Conveyors, flight

Buhler Inc., Minneapolis, MN

Conveyors, fluidizing

CPFD-Software, Albuquerque, New Mexico

Conveyors, gravity

Fr. Jacob Soehne GmbH & Co. KG, Porta Westfalica, NRW

Conveyors, magnetic

Industrial Magnetics, Inc., Boyne City, Michigan
Magnetic Products, Inc., Highland, MI

Conveyors, other

ABI LTD., Concord,
Aumund Fordertechnik GmbH, Rheinberg
Conveyor Components Co., Material Control, Inc., Crosswell, MI
Dymax Corp., Torrington, CT

FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
— See our ad on page 3

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
— See our ad on page 89

LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)
Modern Process Equipment, Inc., Chicago, IL

Conveyors, pneumatic

AIRLANCO, Falls City, NE
Buhler Inc., Minneapolis, MN
Coperion GmbH, Weingarten, Wuert.,
CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)
Dematic Corp., Grand Rapids, MI
Dynamic Air Inc., St. Paul, MN
Filtra-Systems Co., Farmington Hills, Michigan
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
— See our ad on page 3

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
Schenck Process, Kansas City, MO
Vector Technologies Ltd., Milwaukee, WI

Conveyors, portable

CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)
FEECO International, Inc., Green Bay, WI
Omni-Lift, Inc., Salt Lake City, UT
Vibra Screw Inc., Totowa, NJ

Conveyors, roller

LEWCO, Inc., Sandusky, OH

Conveyors, screen

Kinergy Corp., Louisville, KY

Conveyors, screw

FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
— See our ad on page 3

Geroldinger GmbH, Sigharting,
INOX-TECH INC., Ste. Catherine
Stedman, Aurora, IN
Vibra Screw Inc., Totowa, NJ

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)
— See our ad on page 135

Conveyors, slat

LEWCO, Inc., Sandusky, OH

Conveyors, tray

ABI LTD., Concord,

Conveyors, vacuum

Buhler Inc., Minneapolis, MN
CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)
CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)
Dec Group - Dietrich Engineering Consultants sa, Eublens

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Quadro Engineering Corp., WATERLOO,
Schenck Process, Kansas City, MO
Schutte & Koerting, Treviso, PA
Schutte & Koerting, Treviso, PA
Vector Technologies Ltd., Milwaukee, WI

Conveyors, vertical

LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)
Omni-Lift, Inc., Salt Lake City, UT

Conveyors, vibrating

Kinergy Corp., Louisville, KY
Magnetic Products, Inc., Highland, MI
Schenck Process GmbH, Darmstadt
Stedman, Aurora, IN
Vibra Screw Inc., Totowa, NJ

Conveyors, weighing

CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)
REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
— See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)
Vibra Screw Inc., Totowa, NJ

Couplings, pneumatic conveyors

Tuf-Lok International, Madison, WI
Vector Technologies Ltd., Milwaukee, WI

Elevators, belt

Aumund Fordertechnik GmbH, Rheinberg
Omni-Lift, Inc., Salt Lake City, UT
Sweet Manufacturing Company, Springfield, OH

Elevators, bucket

Aumund Fordertechnik GmbH, Rheinberg
BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 2400; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)

FEECO International, Inc., Green Bay, WI
Sweet Manufacturing Company, Springfield, OH

Hose, pneumatic conveyors

Elmridge Inc., Livonia, Michigan
Vector Technologies Ltd., Milwaukee, WI

Solids feeders, airlock

Buhler Inc., Minneapolis, MN
DMN Incorporated, Arkansas
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)
— See our ad on page 135

Solids feeders, batch

Acronis Inc., Moonachie, NJ
Somerville Inc., Somerville, MA
Brabender Technologie GmbH & Co. KG, Duisburg
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
— See our ad on page 3

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

Kubota Corporation, Singapore
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
 Schenck Process, Kansas City, MO
 Siemens Industry, Inc., Process Instrumentation & Analytics, Spring House, PA
 Vibra Screw Inc., Totowa, NJ

Solids feeders, constant weight

Brabender Technologie GmbH & Co. KG, Duisburg
 Kubota Corporation, Singapore

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Vibra Screw Inc., Totowa, NJ

Solids feeders, continuous flow

Brabender Technologie GmbH & Co. KG, Duisburg
 Geroldinger GmbH, Sigharting,

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

Kubota Corporation, Singapore
REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
 — See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembre.us; web site: www.rembe.us)

Vibra Screw Inc., Totowa, NJ

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)
 — See our ad on page 135

Solids feeders, dosing

DMN Incorporated, Arkansas

Solids feeders, gravimetric

Acrison Inc., Moonachie, NJ
 Brabender Technologie GmbH & Co. KG, Duisburg
 Dec Group - Dietrich Engineering Consultants sa, Ecublens
 Kubota Corporation, Singapore

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Schenck Process, Kansas City, MO
 Vibra Screw Inc., Totowa, NJ

Solids feeders, high-pressure

Acrison Inc., Moonachie, NJ
 DMN Incorporated, Arkansas

Solids feeders, proportioning

Acrison Inc., Moonachie, NJ
 Brabender Technologie GmbH & Co. KG, Duisburg
 Kubota Corporation, Singapore
 Vibra Screw Inc., Totowa, NJ

Solids feeders, rotary

Buhler Inc., Minneapolis, MN
 Prater-Sterling, Bollingbrook, IL
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)
 — See our ad on page 135

Solids feeders, vibrating or oscillating

Brabender Technologie GmbH & Co. KG, Duisburg
 Dec Group - Dietrich Engineering Consultants sa, Ecublens
 Kubota Corporation, Singapore
 Magnetic Products, Inc., Highland, MI
 Martin Engineering, Neponset, IL
 Martin Vibration Systems, Marine City, MI
 Stedman, Aurora, IN
 Vibra Screw Inc., Totowa, NJ

Solids feeders, volumetric

Acrison Inc., Moonachie, NJ
 Brabender Technologie GmbH & Co. KG, Duisburg
 Buhler Inc., Minneapolis, MN
 DMN Incorporated, Arkansas
 Dec Group - Dietrich Engineering Consultants sa, Ecublens
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
 — See our ad on page 3

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

Kubota Corporation, Singapore
 Schenck Process, Kansas City, MO
 Vibra Screw Inc., Totowa, NJ
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)
 — See our ad on page 135

LIFTING EQUIPMENT

Hoists

M. O. Industries, Whippany, NJ
 Material Transfer & Storage Inc., Allegan, MI
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
 — See our ad on page 24

PACKAGING CONTAINERS

Bags

Associated Bag Company, Milwaukee, WI
CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 (800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)
 Diversified Toll Services, Cheshire, Connecticut
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)
 Nier Systems Inc, Boca Raton, Florida
 Union Special, LLC, Huntley, IL

Barrels & drums

Diversified Toll Services, Cheshire, Connecticut
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)
 M. O. Industries, Whippany, NJ
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
 — See our ad on page 24

Cartons

Associated Bag Company, Milwaukee, WI
 Diversified Toll Services, Cheshire, Connecticut

Drums & drum liners, corrosion resistant

Associated Bag Company, Milwaukee, WI

Intermediate bulk containers

Bascale Company, Inc., Houston, TX
 Hoover Container Solutions, Houston, TX
 Metano IBC Services, Inc., Perrineville, NJ
 Nier Systems Inc, Boca Raton, Florida

Intermodal bulk containers

Nier Systems Inc, Boca Raton, Florida

Pails & cans

HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haverboecker.com; web site: www.haverboecker.com)Packaging equipment

Bag closing machines

Associated Bag Company, Milwaukee, WI
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haverboecker.com; web site: www.haverboecker.com)
 Union Special, LLC, Huntley, IL

Bag, empty, handling systems

BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)
 Dec Group - Dietrich Engineering Consultants sa, Ecublens
 Geroldinger GmbH, Sigharting,

LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)

Bag filling machines

BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)
 Coperion GmbH, Weingarten, Wuertt., Diversified Toll Services, Cheshire, Connecticut
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
 — See our ad on page 3

HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haverboecker.com; web site: www.haverboecker.com)

Division, OELDE

Material Transfer & Storage Inc., Allegan, MI
 Spee-Dee Packaging Machinery, Inc., Wisconsin
 Vibra Screw Inc., Totowa, NJ

YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysinc@ys-inc.com; web site: www.ys-inc.com)

Bag filling machines, vacuum

Dec Group - Dietrich Engineering Consultants sa, Ecublens
 Vector Technologies Ltd., Milwaukee, WI

Drum filling equipment

Dec Group - Dietrich Engineering Consultants sa, Ecublens
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
 — See our ad on page 3
 Material Transfer & Storage Inc., Allegan, MI
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
 — See our ad on page 24

PSL USA, Boise, ID
 Powder Systems Ltd, Liverpool
 Vector Technologies Ltd., Milwaukee, WI

Packaging equipment, liquids

Bascale Company, Inc., Houston, TX
 EquipNet, Inc., Canton, MA
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haverboecker.com; web site: www.haverboecker.com)
YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysinc@ys-inc.com; web site: www.ys-inc.com)

Packaging equipment, solids

EquipNet, Inc., Canton, MA
 G.R. Sprenger Engineering, Inc., Golden, CO
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haverboecker.com; web site: www.haverboecker.com)
 Spee-Dee Packaging Machinery, Inc., Wisconsin
 Union Special, LLC, Huntley, IL

Packers, bag

BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haverboecker.com; web site: www.haverboecker.com)

Packers, vibrating

Martin Engineering, Neponset, IL

SOLIDS HANDLING EQUIPMENT & SYSTEMS, OTHER

Balers

Security Engineered Machinery, Westboro, MA

Barrel handling equipment

Dematic Corp., Grand Rapids, MI
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haverboecker.com; web site: www.haverboecker.com)

Material Transfer & Storage Inc., Allegan, MI

Drum handling equipment

Dec Group - Dietrich Engineering Consultants sa, Ecublens Dematic Corp., Grand Rapids, MI
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)

M. O. Industries, Whippany, NJ
 Material Transfer & Storage Inc., Allegan, MI
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
 - See our ad on page 24

Vector Technologies Ltd., Milwaukee, WI
 Vibra Screw Inc., Totowa, NJ

Materials handling systems

Acrison Inc., Moonachie, NJ
 Aumund Fordertechnik GmbH, Rheinberg
BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)
 Copernic GmbH, Weingarten, Wuert.,
 CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 69467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)

Dematic Corp., Grand Rapids, MI
 Dynamic Air Inc., St. Paul, MN
 Ehcolo A/S, Foevling
 FEECO International, Inc., Green Bay, WI
 Geroldinger GmbH, Sigharting,

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

LEWCO, Inc., Sandusky, OH
LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)

M. O. Industries, Whippany, NJ
 Magnetic Products, Inc., Highland, MI
 Martin Engineering, Neponset, IL
 Material Transfer & Storage Inc., Allegan, MI

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Orni-Lift, Inc., Salt Lake City, UT
 PSL USA, Boise, ID
 Powder Systems Ltd, Liverpool
REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)
 - See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Southworth Products Corp., Portland, ME
 Sweet Manufacturing Company, Springfield, OH
 Vector Technologies Ltd., Milwaukee, WI
 Vibra Screw Inc., Totowa, NJ

Palletizers

BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)

Bascale Company, Inc., Houston, TX
 Ehcolo A/S, Foevling
 Ehcolo A/S, Foevling
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)

Industrial Magnetics, Inc., Boyne City, Michigan
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
 - See our ad on page 24

Southworth Products Corp., Portland, ME

Robotic components

BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)

Storage systems

BEUMER GROUP GMBH & CO. KG, Oelder Str. 40, Beckum 59269 (+49 2521 240; FAX: +49 2521 24280; e-mail: beumer@beumergroup.com; web site: www.beumergroup.com)

Dematic Corp., Grand Rapids, MI
 Geroldinger GmbH, Sigharting,

HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)
 Vibra Screw Inc., Totowa, NJ

Valves, diverter conveyor

Buhler Inc., Minneapolis, MN
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Vortex, Salina, Kansas

Valves, powder

DMN Incorporated, Arkansas
MUELLER GMBH, P.O. Box 1409, Rheinfelden, 79604 (+49-76-23-9690; FAX: +49-7623-96969; e-mail: info@mueller-gmbh.com; web site: www.mueller-gmbh.com)
 - See our ad on page 24

Posi-flate, St. Paul, MN
 SAMSON Controls, Inc., Baytown, Texas
 Vortex, Salina, Kansas

WEIGHING, FEEDING & PROPORTIONING EQUIPMENT

Batching & blending systems

A & D Weighing, San Jose, CA
 Acrison Inc., Moonachie, NJ
 Brabender Technologie GmbH & Co. KG, Duisburg
 Buhler Inc., Minneapolis, MN
 FEECO International, Inc., Green Bay, WI
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
 - See our ad on page 3

Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

LEWA GMBH, Ulmer Str. 10, Leonberg 71229 (49-7152-14-0; FAX: 49-7152-14-1303; e-mail: lewa@lewa.de; web site: www.lewa.com)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysync@ys-inc.com; web site: www.ys-inc.com)

Proportioners

A & D Weighing, San Jose, CA
 Acrison Inc., Moonachie, NJ
Fluid Metering, Inc., 5 Aerial Way, Suite 500, Syosset, New York 11791 (800-223-3388; 516-922-6050; FAX: 516-624-8261; e-mail: pumps@fmpump.com; web site: www.fmpump.com)

Nordson SEALANT EQUIPMENT, Plymouth, MI

Scales, automatic weighing

A & D Weighing, San Jose, CA
 Acrison Inc., Moonachie, NJ
 Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Scales, bagging, filling

A & D Weighing, San Jose, CA
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)
 Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA

Scales, checkweight

A & D Weighing, San Jose, CA
HAYER & BOECKER OHG, Wire Weaving and Machinery Division, Carl-Haver-Platz 3, OELDE 59302 (+49-2522-300; FAX: 49 2522 30-403; e-mail: haver@haver-boecker.com; web site: www.haverboecker.com)
 Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA
 Mettler-Toledo, Inc., Columbus, OH
 Vibra Screw Inc., Totowa, NJ

Scales, continuous weighing

Acrison Inc., Moonachie, NJ
 Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA
 Kubota Corporation, Singapore
 Mettler-Toledo, Inc., Columbus, OH
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
 Schenck Process, Kansas City, MO
 Schenck Process GmbH, Darmstadt
 Vibra Screw Inc., Totowa, NJ

Scales, conveying

Pacific Scale Co., Inc., Clackamas, OR
 Siemens Industry, Inc., Process Instrumentation & Analytics, Spring House, PA

Scales, counting

A & D Weighing, San Jose, CA
 Mettler-Toledo, Inc., Columbus, OH
 Pacific Scale Co., Inc., Clackamas, OR

Scales, floor, platform

A & D Weighing, San Jose, CA
 Bascale Company, Inc., Houston, TX
 Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA
 Kubota Corporation, Singapore
 Mettler-Toledo, Inc., Columbus, OH
 Pacific Scale Co., Inc., Clackamas, OR

Scales, forklift

Pacific Scale Co., Inc., Clackamas, OR

Scales, gas cylinder filling

A & D Weighing, San Jose, CA

Scales, hopper

A & D Weighing, San Jose, CA
 Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA
 Mettler-Toledo, Inc., Columbus, OH
 Pacific Scale Co., Inc., Clackamas, OR

Scales, portable

A & D Weighing, San Jose, CA
 Mettler-Toledo, Inc., Columbus, OH
 Pacific Scale Co., Inc., Clackamas, OR

Scales, railroad car

Mettler-Toledo, Inc., Columbus, OH
 Schenck Process GmbH, Darmstadt

Scales, recording

A & D Weighing, San Jose, CA

Scales, remote indicating

A & D Weighing, San Jose, CA
 Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA
 Pacific Scale Co., Inc., Clackamas, OR

Scales, tank

Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA
 Mettler-Toledo, Inc., Columbus, OH
 Pacific Scale Co., Inc., Clackamas, OR

Scales, totalizing

A & D Weighing, San Jose, CA
 Pacific Scale Co., Inc., Clackamas, OR

Scales, truck

A & D Weighing, San Jose, CA
 Mettler-Toledo, Inc., Columbus, OH
 Schenck Process GmbH, Darmstadt

3

ELECTRICAL POWER GENERATION & TRANSMISSION

- 120 Bearings & bushings**
- 120 Boilers**
- 120 Boilers, industrial**
- 120 Cable & conduit**
- 120 Drives, Other**
- 120 Drives, Turbine**
- 121 Electrical & power generation equipment**
- 121 Electrical heating equipment**
- 121 Lighting fixtures**
- 121 Motor controls**
- 121 Motors, electric**
- 121 Other electrical equipment**
- 121 Rectifiers**

BEARINGS & BUSHINGS

Bearing isolators

AEGIS Bearing Protection Rings, Mechanic Falls, ME

Bearings

Greene, Tweed & Co., Kulpville, PA
Greene, Tweed & Co. Ltd., Nottingham, Notts
Isotech, Inc, Hatfield, PA
3M Technical Ceramics, Kempten,

Bushings

Isotech, Inc, Hatfield, PA
3M Technical Ceramics, Kempten,
Regal Industries, Inc., Painesville, OH

BOILERS, INDUSTRIAL

Ash conditioning systems

FEECO International, Inc., Green Bay, WI
Mars Mineral, Mars, PA

Boiler accessories

Bryan Steam LLC, Peru, IN

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)

Topog-E Gasket Co., Tulsa, OK

USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, automatic, packaged

Fulton Companies, The, Fulton Thermal Corporation, Pullaski, NY

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, carbon monoxide fired

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, coal fired

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, fire tube

Fulton Companies, The, Fulton Thermal Corporation, Pullaski, NY

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, fluidized bed

CPFD-Software, Albuquerque, New Mexico

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, integral furnace

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, natural gas fired

Bryan Steam LLC, Peru, IN
HTT Energy GmbH, Herford

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, oil fired

Bryan Steam LLC, Peru, IN
HTT Energy GmbH, Herford

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, waste heat recovery

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD
HTT Energy GmbH, Herford

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Boilers, water tube

Bryan Steam LLC, Peru, IN

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

DRIVES, OTHER

Couplings, shaft

IGW - IG Wateeuw International nv, Headquarters, Oostkamp
Voith Turbo GmbH & Co. KG, Crailsheim,

Drives, belt

Isotech, Inc, Hatfield, PA

Drives, conveyor

Rockwell Automation, Inc., Milwaukee, WI
Voith Turbo GmbH & Co. KG, Crailsheim,

Drives, crusher

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Drives, gear

IGW - IG Wateeuw International nv, Headquarters, Oostkamp
MICROMO, Clearwater, FL
Voith Turbo GmbH & Co. KG, Crailsheim,

Drives, magnetic

PDC Machines, Inc., Warminster, PA

Drives, pump

Rockwell Automation, Inc., Milwaukee, WI
Voith Turbo GmbH & Co. KG, Crailsheim,

Drives, variable speed, centrifuge

Rockwell Automation, Inc., Milwaukee, WI

Drives, variable speed, electrical

IGW - IG Wateeuw International nv, Headquarters, Oostkamp

MICROMO, Clearwater, FL
Rockwell Automation, Inc., Milwaukee, WI
Siemens Process Industries and Drives, Alpharetta, Georgia

Drives, variable speed, hydraulic

Voith Turbo GmbH & Co. KG, Crailsheim,

Drives, variable speed, mechanical

IGW - IG Wateeuw International nv, Headquarters, Oostkamp

Voith Turbo GmbH & Co. KG, Crailsheim,

Drives, variable speed, mixer

Rockwell Automation, Inc., Milwaukee, WI

Gears

IGW - IG Wateeuw International nv, Headquarters, Oostkamp

Regal Industries, Inc., Painesville, OH

Joints, universal

Voith Turbo GmbH & Co. KG, Crailsheim,

Shafting

IGW - IG Wateeuw International nv, Headquarters, Oostkamp
Regal Industries, Inc., Painesville, OH

Speed reducers

IGW - IG Wateeuw International nv, Headquarters, Oostkamp
MICROMO, Clearwater, FL

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Transmissions

IGW - IG Wateeuw International nv, Headquarters, Oostkamp

DRIVES, TURBINE

Generator drives, steam

Cobey, Buffalo, New York

Dresser-Rand, Corporate Headquarters, Houston, TX

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Turbines, combined steam-gas

Dresser-Rand, Corporate Headquarters, Houston, TX
HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
MAN Diesel & Turbo SE, Augsburg

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Turbines, mechanical drive, gas

Dresser-Rand, Corporate Headquarters, Houston, TX
MAN Diesel & Turbo SE, Augsburg
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Turbines, mechanical drive, steam

Dresser-Rand, Corporate Headquarters, Houston, TX
MAN Diesel & Turbo SE, Augsburg

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

ELECTRICAL & POWER GENERATION EQUIPMENT

Batteries & electrical storage equipment

Lectrus, Chattanooga, TN

Cogeneration systems & equipment

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

ProSim SA, LABEGE

Russelectric Inc., Hingham, MA

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Engine-generator sets

Lectrus, Chattanooga, TN

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Engines, LPG

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Engines, diesel

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Engines, gasoline

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Engines, natural gas

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Expanders

MAN Diesel & Turbo SE, Augsburg

Generators, electrical

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Generator-turbine sets

Dresser-Rand, Corporate Headquarters, Houston, TX
MAN Diesel & Turbo SE, Augsburg

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Power supplies, emergency

Russelectric Inc., Hingham, MA

S&C Electric Company, Chicago, IL

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

ELECTRICAL HEATING EQUIPMENT

Bands, electric heating

Kloepfer-Therm GmbH & Co. KG, Dortmund
Watlow, St. Louis, MO

Heaters, electric immersion

Dalton Electric Heating Co., Inc., Ipswich, MA
Kloepfer-Therm GmbH & Co. KG, Dortmund
PolyScience, Niles, IL
Watlow, St. Louis, MO

Heaters, thermal fluid electric

Fulton Companies, The, Fulton Thermal Corporation, Pualaski, NY

Kloepfer-Therm GmbH & Co. KG, Dortmund
Mokon, Buffalo, NY
Spaltech International Inc., Halton Hills,

Strips, electric heating

Kloepfer-Therm GmbH & Co. KG, Dortmund
Watlow, St. Louis, MO

Tape, electric heating

BARTEC GmbH, Bad Mergentheim
Kloepfer-Therm GmbH & Co. KG, Dortmund

LIGHTING FIXTURES

Lamps, incandescent

Osram Sylvania, Danvers, MA

Lamps, infrared

Osram Sylvania, Danvers, MA

Lamps, mercury vapor

Osram Sylvania, Danvers, MA

Lamps, photochemical

Osram Sylvania, Danvers, MA

Lamps, sodium vapor

Osram Sylvania, Danvers, MA

Lamps, ultraviolet

Dymax Corp., Torrington, CT
McPherson, Chelmsford, Massachusetts
Osram Sylvania, Danvers, MA

Lighting equipment, emergency

Osram Sylvania, Danvers, MA

Lighting, explosion proof

Osram Sylvania, Danvers, MA
R. STAHL, Waldenburg

Lighting: panelboards, instruments & gages

Osram Sylvania, Danvers, MA

MOTOR CONTROLS

Actuators or starters, motor

Hilliard Corp., Elmira, NY

MOTORS, ELECTRIC

Motors, A.C.

Siemens Process Industries and Drives, Alpharetta, Georgia

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Motors, D.C.

MICROMO, Clearwater, FL

Motors, explosion proof

BARTEC GmbH, Bad Mergentheim

Motors, submersible

MM Industries Inc., Vortri-Siv, Salem, OH

Motors, variable speed

MICROMO, Clearwater, FL

Motors, vertical

MICROMO, Clearwater, FL

OTHER ELECTRICAL EQUIPMENT

Circuit breakers

Phoenix Contact GmbH & Co.KG, Flachmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)

Schurter, Inc., Santa Rosa, CA

Electrical equipment, other

Conveyor Components Co., Material Control, Inc., Crosswell, MI

Electroswitch, Weymouth, MA

Lightning Eliminators & Consultants, Inc., Boulder, CO

Phoenix Contact GmbH & Co.KG, Flachmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)

Rockwell Automation, Inc., Milwaukee, WI

Russelectric Inc., Hingham, MA

S&C Electric Company, Chicago, IL

Schurter, Inc., Santa Rosa, CA

The Industrial Controls Company, Inc.,

Switches, electrical

Electroswitch, Weymouth, MA

Lectrus, Chattanooga, TN

Madison Co., Branford, CT

Rockwell Automation, Inc., Milwaukee, WI

S&C Electric Company, Chicago, IL

Schurter, Inc., Santa Rosa, CA

Siemens Process Industries and Drives, Alpharetta, Georgia

Switchgear & other power distribution equipment

Lectrus, Chattanooga, TN

Madison Co., Branford, CT

Russelectric Inc., Hingham, MA

S&C Electric Company, Chicago, IL

Schurter, Inc., Santa Rosa, CA

The Industrial Controls Company, Inc.,

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Transformers

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

RECTIFIERS

Rectifiers, germanium controlled

Denver Mineral Engineers, Inc., Littleton, CO

4

INSTRUMENTATION & CONTROLS

123	Actuators, operators	127	Indicators
123	Analyzers, offstream	130	Measurement & testing equipment
125	Analyzers, onstream	132	Recorders
125	Computers, process control	132	Transmitters & data transmission equipment
126	Controllers		
127	Data presentation equipment		

DISPLAY ADVERTISERS IN THIS SECTION

Flexim GmbH

127

ACTUATORS, OPERATORS

Actuators

ARCA Regler GmbH, Toenisvorst
AUMA RIESTER GMBH & CO. KG, Aumastrasse 1, P.O. Box 1362, Muelheim, 79379 (+49 7631 8090; FAX: +49 7631 809250; e-mail: riester@auma.com; web site: www.auma.com)

Auma Actuators Inc., Cannonsburg, PA
 Burkert Fluid Control Systems, Ingelfingen, Burkert Fluid Control Systems, Charlotte, NC
Georg Fischer Piping Systems Ltd., Schaffhausen 8201 (41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.ps@georgfischer.com; web site: www.gfps.com)
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflow-control.com)

Inline Industries, Inc., 9056 Garvey Ave., Rosemead, California 91770 (800-568-8998; e-mail: info@ballvalve.com; web site: www.ballvalve.com)

Isotech, Inc., Hatfield, PA
 Posi-flate, St. Paul, MN
 Rockwell Automation, Inc., Milwaukee, WI
 SAMSON Controls, Inc., Baytown, Texas
 Voith Turbo GmbH & Co. KG, Crailsheim,

Cylinders, pneumatic

Isotech, Inc., Hatfield, PA

Valve operators, diaphragm

SAMSON Controls, Inc., Baytown, Texas

Valve operators, electrohydraulic

SAMSON Controls, Inc., Baytown, Texas
 Voith Turbo GmbH & Co. KG, Crailsheim,

Valve operators, electropneumatic

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

SAMSON Controls, Inc., Baytown, Texas

Valve operators, motor operated

SAMSON Controls, Inc., Baytown, Texas

Valve operators, piston

AUMA RIESTER GMBH & CO. KG, Aumastrasse 1, P.O. Box 1362, Muelheim, 79379 (+49 7631 8090; FAX: +49 7631 809250; e-mail: riester@auma.com; web site: www.auma.com)

Auma Actuators Inc., Cannonsburg, PA
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

SAMSON Controls, Inc., Baytown, Texas

Valve operators, pneumatic

Burkert Fluid Control Systems, Charlotte, NC
 Burkert Fluid Control Systems, Ingelfingen,
Flowserve Corp., Flow Control Div., 1978 Foreman Dr., Cookeville, TN 38502-2609 (800-251-6761; 972-443-6500; FAX: 931-432-5518; web site: www.flowserve.com)

Posi-flate, St. Paul, MN
 SAMSON Controls, Inc., Baytown, Texas

Valve operators, solenoid

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)

SAMSON Controls, Inc., Baytown, Texas

Valve positioners, microprocessor equipped

ARCA Regler GmbH, Toenisvorst
Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
 SAMSON Controls, Inc., Baytown, Texas
 Siemens Process Industries and Drives, Norcross, Georgia

Valve positioners, other

SAMSON Controls, Inc., Baytown, Texas

Valve, position indicators

Flowserve Corp., 222 W. Las Colinas Blvd., Suite 1500, Irving, TX 75039-5421 (972-443-6500; FAX: 972-443-6800; web site: www.flowserve.com)
Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)
 SAMSON Controls, Inc., Baytown, Texas

ANALYZERS, OFFSTREAM

Analyzers, BOD

LAR Process Analysers AG, Berlin

Analyzers, VOCs

Analytical Systems Int'l / KECO R&D, Houston, TX
 Idealab Inc., Franklin, MA
 Sporian Microsystems, Inc., Lafayette, CO

Analyzers, air quality

Clean Air Engineering, Palatine, IL
 PANalytical BV, Almelo,
 Sierra Monitor Corp., Milpitas, CA
 Sporian Microsystems, Inc., Lafayette, CO
 Staplex Co., Air Sampler Div., Brooklyn, NY

Analyzers, atomic absorption

Shimadzu Scientific Instruments, Columbia, MD

Analyzers, biological

Fluid Imaging Technologies, Inc., Scarborough, ME
 Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA

Analyzers, carbon dioxide or monoxide

Analytical Systems Int'l / KECO R&D, Houston, TX
 Delphian Corp., Northvale, NJ
 GOW-MAC Instrument Co., Bethlehem, PA
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK
 Sierra Monitor Corp., Milpitas, CA
 Systech Instruments Ltd (Systech Illinois), Thame UIC Inc., Joliet, IL

Analyzers, chlorine

CHEMetrics Inc., Calverton, Virginia
 Sierra Monitor Corp., Milpitas, CA

Analyzers, chlorine, total

PANalytical BV, Almelo,

Analyzers, chromatographic

BARTEC GmbH, Bad Mergentheim
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
 GOW-MAC Instrument Co., Bethlehem, PA
 PDR-Separations LLC, Palm Beach Gardens, FL
 Shimadzu Scientific Instruments, Columbia, MD
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK

Analyzers, combustible gases

Control Instruments Corp., Fairfield, NJ
 Delphian Corp., Northvale, NJ
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
 Sensor Electronics Corporation, Savage, MN
 Sierra Monitor Corp., Milpitas, CA

Analyzers, combustion

Clean Air Instrument Rental, Palatine, IL
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

LAR Process Analysers AG, Berlin
 LECO Corporation, St. Joseph, MI

Analyzers, concentration

Anton PAAR GmbH, Graz,
 Anton PAAR USA, Ashland, VA
 Automation Products Inc. (Dynatrol Div.), Houston, TX
 Berthold Technologies GmbH & Co. KG, Bad Wildbad
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

Fluid Imaging Technologies, Inc., Scarborough, ME
 K-Patents, Inc., Naperville, IL
 Polytec, Inc., Process Analytics, Hopkinton
 SensoTech GmbH, Magdeburg-Barleben,
 SensoTech Inc., Wayne, New Jersey
 Sierra Monitor Corp., Milpitas, CA

tec5USA, Plainview, NY

Analyzers, conductivity

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

JUMO GmbH & Co. KG, Fulda
Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)

Systech Instruments Ltd (Systech Illinois), Thame
 Van London-pHoenix Co., Houston, TX

Analyzers, corrosion rate

Metal Samples Co., Munford,

Analyzers, emission

Control Instruments Corp., Fairfield, NJ
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
 M&C TechGroup, Ventura, CA
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK

Analyzers, environmental conditions

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
 Idealab Inc., Franklin, MA
 Sierra Monitor Corp., Milpitas, CA
 Sporian Microsystems, Inc., Lafayette, CO
 Staplex Co., Air Sampler Div., Brooklyn, NY
 Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA

Analyzers, fats & oils

Fluid Imaging Technologies, Inc., Scarborough, ME
 MoistTech Corp., Sarasota, FL

Analyzers, gas density

PFEIFFER VACUUM GMBH, Berliner Strasse 43, Asslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)
 Pfeiffer Vacuum, Inc., Nashua, NH
 Systech Instruments Ltd (Systech Illinois), Thame

Analyzers, hydrocarbons

Analytical Systems Int'l / KECO R&D, Houston, TX
 BARTEC GmbH, Bad Mergentheim
 Control Instruments Corp., Fairfield, NJ
 GOW-MAC Instrument Co., Bethlehem, PA
 Sensor Electronics Corporation, Savage, MN
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK
 Sierra Monitor Corp., Milpitas, CA
 Sporian Microsystems, Inc., Lafayette, CO
 Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA

Analyzers, hydrogen

Control Instruments Corp., Fairfield, NJ
 LECO Corporation, St. Joseph, MI
 Sierra Monitor Corp., Milpitas, CA
 Systech Instruments Ltd (Systech Illinois), Thame

Analyzers, infrared

Analytical Systems Int'l / KECO R&D, Houston, TX
 Idealab Inc., Franklin, MA
 McPherson, Chelmsford, Massachusetts
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK
 Sierra Monitor Corp., Milpitas, CA

Analyzers, mass spectrometer

LECO Corporation, St. Joseph, MI
PFEIFFER VACUUM GMBH, Berliner Strasse 43, Asslar, 35614 (+49-6441-802 0; FAX: +49-6441-802 1202; e-mail: info@pfeiffer-vacuum.de; web site: www.pfeiffer-vacuum.com)
 Pfeiffer Vacuum, Inc., Nashua, NH
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK

Analyzers, moisture content

A & D Weighing, San Jose, CA
 BARTEC GmbH, Bad Mergentheim
 FOSS NIRSystems, Inc., Laurel, MD
 LECO Corporation, St. Joseph, MI
 Polytec, Inc., Process Analytics, Hopkinton
 Siemens Process Industries and Drives, Norcross, Georgia
 Systech Instruments Ltd (Systech Illinois), Thame

Analyzers, near infrared

BARTEC GmbH, Bad Mergentheim

FOSS NIRSystems, Inc., Laurel, MD
 Guided Wave, Rancho Cordova, California
 Idealab Inc., Franklin, MA
 McPherson, Chelmsford, Massachusetts
 PANalytical BV, Almelo,
 Polytec, Inc., Process Analytics, Hopkinton
 tec5USA, Plainview, NY

Analyzers, neutron activation

PANalytical BV, Almelo,

Analyzers, nitrogen

LECO Corporation, St. Joseph, MI
 Sporian Microsystems, Inc., Lafayette, CO
 Systech Instruments Ltd (Systech Illinois), Thame

Analyzers, nitrogen oxide

Sierra Monitor Corp., Milpitas, CA

Analyzers, nitrogen, total

LAR Process Analyzers AG, Berlin
 LECO Corporation, St. Joseph, MI
 Shimadzu Scientific Instruments, Columbia, MD
 Shimadzu Scientific Instruments, Columbia, MD

Analyzers, oil content

Fluid Imaging Technologies, Inc., Scarborough, ME
 Sigris Photometer AG, Ennetbuergen
 Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA

Analyzers, organic carbon

Analytical Systems Int'l / KECO R&D, Houston, TX
 LAR Process Analyzers AG, Berlin
 LECO Corporation, St. Joseph, MI
 Sigris Photometer AG, Ennetbuergen
 UIC Inc., Joliet, IL

Analyzers, organic carbon, total

LAR Process Analyzers AG, Berlin
 Shimadzu Scientific Instruments, Columbia, MD
 Shimadzu Scientific Instruments, Columbia, MD
 UIC Inc., Joliet, IL

Analyzers, oxygen content

AirSep Corp., A Chart Industries Company, A Chart Industries Company, Buffalo, New York
 Sierra Monitor Corp., Milpitas, CA
 Systech Instruments Ltd (Systech Illinois), Thame

Analyzers, oxygen demand

LAR Process Analyzers AG, Berlin

Analyzers, oxygen, dissolved

Anton PAAR GmbH, Graz,
 Dr. Thiedig GmbH & Co KG, Berlin
 Van London-pHoenix Co., Houston, TX

Analyzers, ozone content

Sigris Photometer AG, Ennetbuergen

Analyzers, pH

Analytical Measurements, Chester, NJ
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
 JUMO GmbH & Co. KG, Fulda
Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)
 Van London-pHoenix Co., Houston, TX
 Walchem, IWAKI America, Inc., Holliston, MA

Analyzers, particle size

FRITSSCH GmbH, Milling and Sizing, Idar-Oberstein
 Fluid Imaging Technologies, Inc., Scarborough, ME
 G.R. Sprenger Engineering, Inc., Golden, CO
 PANalytical BV, Almelo,
 Shimadzu Scientific Instruments, Columbia, MD
 Sympatec GmbH, System | Partikel | Technik | Clausthal-Zellerfeld

Analyzers, phosphorus

PANalytical BV, Almelo,

Analyzers, photometric

CHEMetrics Inc., Calverton, Virginia

Analyzers, sodium ion concentration

Dr. Thiedig GmbH & Co KG, Berlin

Analyzers, sound

SensoTech GmbH, Magdeburg-Barleben,

Analyzers, spectrometer

FOSS NIRSystems, Inc., Laurel, MD

Idealab Inc., Franklin, MA
 LECO Corporation, St. Joseph, MI
 MIDAC Corp., Westfield, MA
 McPherson, Chelmsford, Massachusetts
 PANalytical BV, Almelo,
 Pfeiffer Vacuum, Inc., Nashua, NH
 Polytec, Inc., Process Analytics, Hopkinton
 Shimadzu Scientific Instruments, Columbia, MD
 Sporian Microsystems, Inc., Lafayette, CO

Analyzers, spectrophotometer

FOSS NIRSystems, Inc., Laurel, MD
 Idealab Inc., Franklin, MA
 McPherson, Chelmsford, Massachusetts
 Shimadzu Scientific Instruments, Columbia, MD
 Shimadzu Scientific Instruments, Columbia, MD
 Sias, New Castle, DE
 tec5USA, Plainview, NY

Analyzers, stack gases

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
 MIDAC Corp., Westfield, MA
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK

Analyzers, sulfur dioxide

Control Instruments Corp., Fairfield, NJ
 PureAire Monitoring Systems, Inc., Lake Zurich, IL
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK
 Sierra Monitor Corp., Milpitas, CA

Analyzers, sulfur, total

LECO Corporation, St. Joseph, MI
 PANalytical BV, Almelo,
 Siemens Industry, Inc., Applied Automation, Bartlesville, OK

Analyzers, suspended solids

Automation Products Inc. (Dynatrol Div.), Houston, TX
 Fluid Imaging Technologies, Inc., Scarborough, ME
 Markland Specialty Engineering Ltd., Georgetown,
 Sigris Photometer AG, Ennetbuergen

Analyzers, thermal

ATS RheoSystems, Cannon Instrument Company, Borden-town, NJ
 Shimadzu Scientific Instruments, Columbia, MD
 Shimadzu Scientific Instruments, Columbia, MD

Analyzers, thin film

tec5USA, Plainview, NY

Analyzers, titration

CHEMetrics Inc., Calverton, Virginia

Analyzers, total solids

K-Patents, Inc., Naperville, IL

Analyzers, ultraviolet

McPherson, Chelmsford, Massachusetts
 tec5USA, Plainview, NY

Analyzers, vapor pressure

BARTEC GmbH, Bad Mergentheim

Analyzers, water quality

Analytical Systems Int'l / KECO R&D, Houston, TX
 Dr. Thiedig GmbH & Co KG, Berlin
 Fluid Imaging Technologies, Inc., Scarborough, ME
 LAR Process Analyzers AG, Berlin
Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)
 Sporian Microsystems, Inc., Lafayette, CO
 Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA
 Van London-pHoenix Co., Houston, TX

Detectors, dust

Auburn Systems, LLC, Danvers, MA

Detectors, explosion

Compur Monitors GmbH & Co. KG, Munich
FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Detectors, flame

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)
 General Monitors, Lake Forest, CA
 Sensor Electronics Corp., Minneapolis, MN

Detectors, gases

Analytical Systems Int'l / KECO R&D, Houston, TX
 Compur Monitors GmbH & Co. KG, Munich
 Control Instruments Corp., Fairfield, NJ
 Delphian Corp., Northvale, NJ
 ENMET, Ann Arbor, Michigan
 GOW-MAC Instrument Co., Bethlehem, PA
 General Monitors, Lake Forest, CA
 GfG Instrumentation, Inc., Ann Arbor, MI
 Mil-Ram Technology, Inc., Fremont, CA
 PureAire Monitoring Systems, Inc., Lake Zurich, IL
 Sensor Electronics Corp., Minneapolis, MN
 Sensor Electronics Corporation, Savage, MN
SIERRA INSTRUMENTS, INC., 5 Harris Ct, Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)
 Sierra Monitor Corp., Milpitas, CA
 Systech Instruments Ltd (Systech Illinois), Thame

Detectors, gases, combustible

Control Instruments Corp., Fairfield, NJ
 Delphian Corp., Northvale, NJ
 ENMET, Ann Arbor, Michigan
 General Monitors, Lake Forest, CA
 GfG Instrumentation, Inc., Ann Arbor, MI
 Mil-Ram Technology, Inc., Fremont, CA
 PureAire Monitoring Systems, Inc., Lake Zurich, IL
 Sensor Electronics Corp., Minneapolis, MN
 Sensor Electronics Corporation, Savage, MN
 Sierra Monitor Corp., Milpitas, CA

Detectors, gases, toxic

Analytical Systems Int'l / KECO R&D, Houston, TX
 Control Instruments Corp., Fairfield, NJ
 Delphian Corp., Northvale, NJ
 ENMET, Ann Arbor, Michigan
 General Monitors, Lake Forest, CA
 GfG Instrumentation, Inc., Ann Arbor, MI
 Mil-Ram Technology, Inc., Fremont, CA
 PureAire Monitoring Systems, Inc., Lake Zurich, IL
 Sensor Electronics Corp., Minneapolis, MN
 Sensor Electronics Corporation, Savage, MN
 Sierra Monitor Corp., Milpitas, CA

Detectors, liquid-leak

Analytical Systems Int'l / KECO R&D, Houston, TX
 SGB GmbH, Siegen
 SensoTech GmbH, Magdeburg-Barleben,

Detectors, metal

PANalytical BV, Almelo,

Detectors, moisture

Berthold Technologies GmbH & Co.KG, Bad Wildbad

Detectors, other

PDR-Separations LLC, Palm Beach Gardens, FL
USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Detectors, radiation

Berthold Technologies GmbH & Co.KG, Bad Wildbad
 TowerScan, Port Huron, MI
 TowerScan, Sarnia,

Detectors, sludge blanket level

Madison Co., Branford, CT

Markland Specialty Engineering Ltd., Georgetown,

Detectors, vibration

PR|UFTTECHNIK Dieter Busch AG, Ismaning,
 Sporian Microsystems, Inc., Lafayette, CO
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
 — See our ad on page 98

Samplers, automatic

BIAR Sampling Systems, Gonzales, LA
Fluid Metering, Inc., 5 Aerial Way, Suite 500, Syosset, New York 11791 (800-223-3388; 516-922-6050; FAX: 516-624-8261; e-mail: pumps@fmpump.com; web site: www.fmpump.com)
 Markland Specialty Engineering Ltd., Georgetown,
 Tema Systems, Inc., Cincinnati, OH

Samplers, gas, air

BIAR Sampling Systems, Gonzales, LA
 Clean Air Express Equipment, Palatine, IL
 Clean Air Instrument Rental, Palatine, IL
 M&C TechGroup, Ventura, CA
 Staplex Co., Air Sampler Div., Brooklyn, NY

Samplers, liquid

BIAR Sampling Systems, Gonzales, LA

PRODUCT DIRECTORY

Fluid Metering, Inc., 5 Aerial Way, Suite 500, Syosset, New York 11791 (800-223-3388; 516-922-6050; FAX: 516-624-8261; e-mail: pumps@fmipump.com; web site: www.fmipump.com)

Markland Specialty Engineering Ltd., Georgetown, **Sentry Equip Corp**, 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Sias, New Castle, DE
Xiril AG, Hombrechtikon

Samplers, solids

Sympatec GmbH, System | Partikel | Technik | Clausthal-Zellerfeld

ANALYZERS, ONSTREAM

Chromatographs, onstream

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Siemens Industry, Inc., Applied Automation, Bartlesville, OK

Monitors, VOCs

Analytical Systems Int'l / KECO R&D, Houston, TX
Clean Air Express Equipment, Palatine, IL
Clean Air Instrument Rental, Palatine, IL
Mil-Ram Technology, Inc., Fremont, CA
Sporian Microsystems, Inc., Lafayette, CO

Monitors, air quality

Altech PCME, Illinois
ENMET, Ann Arbor, Michigan
MIDAC Corp., Westfield, MA
Sensor Electronics Corp., Minneapolis, MN
Siemens Process Industries and Drives, Norcross, Georgia
Sierra Monitor Corp., Milpitas, CA

Monitors, ammonia

Altech PCME, Illinois
GiG Instrumentation, Inc., Ann Arbor, MI
MIDAC Corp., Westfield, MA
Mil-Ram Technology, Inc., Fremont, CA
PureAire Monitoring Systems, Inc., Lake Zurich, IL
SensoTech GmbH, Magdeburg-Barleben,

Monitors, carbon dioxide or monoxide

Altech PCME, Illinois
Delphian Corp., Northvale, NJ
ENMET, Ann Arbor, Michigan
GOW-MAC Instrument Co., Bethlehem, PA
General Monitors, Lake Forest, CA
GiG Instrumentation, Inc., Ann Arbor, MI
Mil-Ram Technology, Inc., Fremont, CA
PureAire Monitoring Systems, Inc., Lake Zurich, IL
Sensor Electronics Corp., Minneapolis, MN
Sierra Monitor Corp., Milpitas, CA

Monitors, chlorine

ENMET, Ann Arbor, Michigan
GiG Instrumentation, Inc., Ann Arbor, MI
Mil-Ram Technology, Inc., Fremont, CA
PureAire Monitoring Systems, Inc., Lake Zurich, IL
SensoTech GmbH, Magdeburg-Barleben,
Sensor Electronics Corp., Minneapolis, MN
Sierra Monitor Corp., Milpitas, CA
optek-Danulat, Inc., Germantown, WI

Monitors, colorimetric

Guided Wave, Rancho Cordova, California
optek-Danulat, Inc., Germantown, WI

Monitors, combustible gases, or vapors

Control Instruments Corp., Fairfield, NJ
Delphian Corp., Northvale, NJ
ENMET, Ann Arbor, Michigan
General Monitors, Lake Forest, CA
GiG Instrumentation, Inc., Ann Arbor, MI
Mil-Ram Technology, Inc., Fremont, CA
PureAire Monitoring Systems, Inc., Lake Zurich, IL
Sensor Electronics Corp., Minneapolis, MN
Sierra Monitor Corp., Milpitas, CA

Monitors, composition

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

Guided Wave, Rancho Cordova, California
SensoTech GmbH, Magdeburg-Barleben,
SensoTech Inc., Wayne, New Jersey

Monitors, conductivity

Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)
optek-Danulat, Inc., Germantown, WI

Monitors, dispersion

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@fluidcomponents.com; web site: www.fluidcomponents.com)

Monitors, dust

Auburn Systems, LLC, Danvers, MA
Clean Air Instrument Rental, Palatine, IL
Matsushima Measure Tech, Des Plaines, IL
Midwesco Filter Resources, Inc., Winchester, VA
Monitor Technologies LLC, Elburn, IL
Sigrist Photometer AG, Ennetbuergen

Monitors, emissions, continuous

Altech PCME, Illinois
Auburn Systems, LLC, Danvers, MA
Clean Air Engineering, Palatine, IL
FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@fluidcomponents.com; web site: www.fluidcomponents.com)
MIDAC Corp., Westfield, MA
SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Monitors, humidity

S-Products Inc., Fairfield, CT

Monitors, hydrocarbon content

Analytical Systems Int'l / KECO R&D, Houston, TX
Clean Air Express Equipment, Palatine, IL
ENMET, Ann Arbor, Michigan
General Monitors, Lake Forest, CA
GiG Instrumentation, Inc., Ann Arbor, MI
Sensor Electronics Corp., Minneapolis, MN
Sierra Monitor Corp., Milpitas, CA
Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA

Monitors, hydrogen cyanide content

PureAire Monitoring Systems, Inc., Lake Zurich, IL
Sensor Electronics Corp., Minneapolis, MN
Sierra Monitor Corp., Milpitas, CA

Monitors, hydrogen sulfide content

Analytical Systems Int'l / KECO R&D, Houston, TX
ENMET, Ann Arbor, Michigan
General Monitors, Lake Forest, CA
GiG Instrumentation, Inc., Ann Arbor, MI
Sensor Electronics Corp., Minneapolis, MN
Sierra Monitor Corp., Milpitas, CA

Monitors, mercury content

Altech PCME, Illinois

Monitors, octane

FOSS NIRSystems, Inc., Laurel, MD
Guided Wave, Rancho Cordova, California

Monitors, oil content

Fluid Imaging Technologies, Inc., Scarborough, ME
SensoTech GmbH, Magdeburg-Barleben,
SensoTech Inc., Wayne, New Jersey
Sigrist Photometer AG, Ennetbuergen
Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA
optek-Danulat, Inc., Germantown, WI

Monitors, opacity

Altech PCME, Illinois
Durag Inc., Environmental Hardware, Mendota Heights, Minnesota

Instrumentation & controls

Monitors, organic carbon, total

LAR Process Analysers AG, Berlin
Sigrist Photometer AG, Ennetbuergen

Monitors, oxygen content

ENMET, Ann Arbor, Michigan
General Monitors, Lake Forest, CA
GiG Instrumentation, Inc., Ann Arbor, MI
PureAire Monitoring Systems, Inc., Lake Zurich, IL
Sensor Electronics Corp., Minneapolis, MN
Sierra Monitor Corp., Milpitas, CA

Monitors, pH

Analytical Measurements, Chester, NJ
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
Van London-phoenix Co., Houston, TX

Monitors, particle size

Fluid Imaging Technologies, Inc., Scarborough, ME
G.R. Sprenger Engineering, Inc., Golden, CO
Sympatec GmbH, System | Partikel | Technik | Clausthal-Zellerfeld

Monitors, stack gases

Altech PCME, Illinois
Clean Air Engineering, Palatine, IL
FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@fluidcomponents.com; web site: www.fluidcomponents.com)
M&C TechGroup, Ventura, CA
MIDAC Corp., Westfield, MA
Mil-Ram Technology, Inc., Fremont, CA
Sigrist Photometer AG, Ennetbuergen

Monitors, sulfur

SensoTech Inc., Wayne, New Jersey

Monitors, viscosity

Automation Products Inc. (Dynatrol Div.), Houston, TX
BARTEC GmbH, Bad Mergentheim
Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts
Hydramotion Ltd, Malton
LOAD CONTROLS, INC., 53 Technology Park Rd., Sturbridge, Massachusetts 01566 (888-600-3247; 508-347-2606; FAX: 508-347-2064; web site: www.loadcontrols.com)
— See our ad on page 25

Monitors, water quality

Analytical Systems Int'l / KECO R&D, Houston, TX
Fluid Imaging Technologies, Inc., Scarborough, ME
LAR Process Analysers AG, Berlin
Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)
Sigrist Photometer AG, Ennetbuergen
Sporian Microsystems, Inc., Lafayette, CO
Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA
Van London-phoenix Co., Houston, TX
optek-Danulat, Inc., Germantown, WI

Spectrometer accessories or services

FOSS NIRSystems, Inc., Laurel, MD
Guided Wave, Rancho Cordova, California
McPherson, Chelmsford, Massachusetts
Polytec, Inc., Process Analytics, Hopkinton
tec5USA, Plainview, NY

Spectrometers

FOSS NIRSystems, Inc., Laurel, MD
Guided Wave, Rancho Cordova, California
MIDAC Corp., Westfield, MA
McPherson, Chelmsford, Massachusetts
Pfeifer Vacuum, Inc., Nashua, NH
Polytec, Inc., Process Analytics, Hopkinton
optek-Danulat, Inc., Germantown, WI
tec5USA, Plainview, NY

COMPUTERS, PROCESS CONTROL

Analog process control computers

Acromag, Inc., Wixom, MI

Direct digital process control computers

Acromag, Inc., Wixom, MI

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Siemens Process Industries and Drives, Alpharetta, Georgia
Sierra Monitor Corp., Milpitas, CA

Hierarchical process control computers

Bedrock Automation, Canton, Massachusetts

Hybrid process control computers

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Input-output equipment

Acromag, Inc., Wixom, MI

Bedrock Automation, Canton, Massachusetts

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)

Moore Industries International, Inc., North Hills, CA

R. STAHL, Waldenburg

Sierra Monitor Corp., Milpitas, CA

Symmetric Research, Las Vegas, NV

Supervisory process control computers

Acromag, Inc., Wixom, MI

Bedrock Automation, Canton, Massachusetts

Digital Applications International, London

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Sierra Monitor Corp., Milpitas, CA

Vista Control Systems, Inc., Los Alamos, NM

CONTROLLERS

Controllers, SCR power

Watlow, St. Louis, MO

Controllers, air conditioning

SAMSON Controls, Inc., Baytown, Texas

Controllers, batching or weighing

A & D Weighing, San Jose, CA

Acricron Inc., Moonachie, NJ

Bascale Company, Inc., Houston, TX

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Red Seal Measurement, Greenwood, SC

Controllers, bin level

Automation Products Inc. (Dynatrol Div.), Houston, TX

Conveyor Components Co., Material Control, Inc., Crosswell, MI

Monitor Technologies LLC, Elburn, IL

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Controllers, boiler

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

SAMSON Controls, Inc., Baytown, Texas

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Controllers, combustion

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)

— See our ad on page 62

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Controllers, electric

HIMA Paul Hildebrandt GmbH + Co KG, Bruehl

SAMSON Controls, Inc., Baytown, Texas

Sierra Monitor Corp., Milpitas, CA

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Controllers, flow & flow ratio

Bronkhorst High-Tech BV, Nijverheidsstraat 1A, Ruurlo NL-7261AK (+31 573458800; FAX: +31 573458808; e-mail: info@bronkhorst.com; web site: www.bronkhorst.com)

Brooks Instruments, Hatfield, PA

Burkert Fluid Control Systems, Ingeltingen,

Burkert Fluid Control Systems, Charlotte, NC

Conveyor Components Co., Material Control, Inc., Crosswell, MI

Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Red Seal Measurement, Greenwood, SC

SAMSON Controls, Inc., Baytown, Texas

Siemens Industry, Inc., Process Instrumentation & Analytics, Spring House, PA

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

V2 Flow Controls, Burr Ridge, Illinois

Controllers, humidity

S-Products Inc., Fairfield, CT

Thermotron, Holland, MI

Controllers, liquid level

Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Georg Fischer Piping Systems Ltd., Schaffhausen 8201 (41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info.ps@georgfischer.com; web site: www.gfps.com)

Levelase, Inc., Denver, Colorado

Madison Co., Branford, CT

Met-Pro Global Pump Solutions, a CECO Environmental

Company, Telford, Pennsylvania

Monitor Technologies LLC, Elburn, IL

Siemens Industry, Inc., Process Instrumentation & Analytics, Spring House, PA

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Controllers, oxidation-reduction potential

Analytical Measurements, Chester, NJ

Controllers, pH

Analytical Measurements, Chester, NJ

Siemens Industry, Inc., Process Instrumentation & Analytics, Spring House, PA

Van London-Phoenix Co., Houston, TX

Walchem, IWAKI America, Inc., Holliston, MA

Controllers, pneumatic

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Pneumatech, Inc., Rock Hill, SC

SAMSON Controls, Inc., Baytown, Texas

Controllers, pressure

Brooks Instruments, Hatfield, PA

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

SAMSON Controls, Inc., Baytown, Texas

Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

— See our ad on page 98

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Controllers, process

Automation Products Inc. (Dynatrol Div.), Houston, TX

Bedrock Automation, Canton, Massachusetts

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

JUMO GmbH & Co. KG, Fulda

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Rockwell Automation, Inc., Milwaukee, WI

Siemens Process Industries and Drives, Norcross, Georgia

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Sierra Monitor Corp., Milpitas, CA

Watlow, St. Louis, MO

Controllers, product

Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Controllers, programmable

Bedrock Automation, Canton, Massachusetts

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

JUMO GmbH & Co. KG, Fulda

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Phoenix Contact GmbH & Co.KG, Flachmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)

Rockwell Automation, Inc., Milwaukee, WI

Siemens Process Industries and Drives, Alpharetta, Georgia

Sierra Monitor Corp., Milpitas, CA

Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

The Industrial Controls Company, Inc.,

Walchem, IWAKI America, Inc., Holliston, MA

Controllers, pump

Fluid Metering, Inc., 5 Aerial Way, Suite 500, Syosset, New York 11791 (800-223-3388; 516-922-6050; FAX: 516-624-8261; e-mail: pumps@fmipump.com; web site: www.fmipump.com)

Pfeiffer Vacuum, Inc., Nashua, NH

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)

Itron, Inc., Santa Cruz, CA

LAUDA DR. R. WOBSEY GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Mokon, Buffalo, NY

Omega Engineering Inc., Stamford, Connecticut

PolyScience, Niles, IL

Raytek Corp., Santa Cruz, CA

Rockwell Automation, Inc., Milwaukee, WI

SAMSON Controls, Inc., Baytown, Texas

Tempco Electric Heater Co, Illinois

Thermotron, Holland, MI

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Watlow, St. Louis, MO

Controllers, vacuum

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Controllers, viscosity

Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts

Regulators, air

LA-MAN Corp., Mazeppa, MN

SAMSON Controls, Inc., Baytown, Texas

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
— See our ad on page 98

Regulators, back pressure

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

SAMSON Controls, Inc., Baytown, Texas

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
— See our ad on page 98

Regulators, feedwater

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Regulators, flow

Bronkhorst High-Tech BV, Nijverheidsstraat 1A, Ruurlo NL-7261AK (+31 573458800; FAX: +31 573458808; e-mail: info@bronkhorst.com; web site: www.bronkhorst.com)

Brooks Instruments, Hatfield, PA

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

SAMSON Controls, Inc., Baytown, Texas

Regulators, gas

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

SAMSON Controls, Inc., Baytown, Texas

Regulators, pressure

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Brooks Instruments, Hatfield, PA

CASHCO, INC., P.O. Box 6, 607 W. 15th, Ellsworth, Kansas 67439-0006 (785-472-4461; FAX: 785-472-3539; e-mail: sales@cashco.com; web site: www.cashco.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

SAMSON Controls, Inc., Baytown, Texas

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
— See our ad on page 98

Regulators, temperature

PolyScience, Niles, IL

SAMSON Controls, Inc., Baytown, Texas

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
— See our ad on page 98

Regulators, vacuum

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
— See our ad on page 98

DATA PRESENTATION EQUIPMENT

Counters

Acromag, Inc., Wixom, MI

Data logging systems

Acromag, Inc., Wixom, MI

PRYÚFTECHNIK Dieter Busch AG, Ismaning,

Sierra Monitor Corp., Milpitas, CA

Symmetric Research, Las Vegas, NV

Displays, liquid-crystal

R. STAHL, Waldenburg

Totalizers

Acromag, Inc., Wixom, MI

Sierra Monitor Corp., Milpitas, CA

INDICATORS

Alarms, annunciator

Acromag, Inc., Wixom, MI

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Alarms, carbon monoxide

Delphian Corp., Northvale, NJ

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Sierra Monitor Corp., Milpitas, CA

Alarms, combustible gases

Control Instruments Corp., Fairfield, NJ

Delphian Corp., Northvale, NJ

Sierra Monitor Corp., Milpitas, CA

Alarms, combustion

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)

Alarms, flame

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)

Alarms, flow

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)

Madison Co., Branford, CT

Oseco, Broken Arrow, OK

Universal Flow Monitors, Inc., Hazel Park, MI

Alarms, humidity

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)

Alarms, liquid level

Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)

Levelese, Inc, Denver, Colorado

Madison Co., Branford, CT

Moore Industries International, Inc., North Hills, CA

TankLink, a wholly-owned subsidiary of Telular Corporation, Chicago, IL

Alarms, motion

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Alarms, other

Acromag, Inc., Wixom, MI

Alarms, portable (gas, vapor)

Sierra Monitor Corp., Milpitas, CA

Alarms, pressure

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Moore Industries International, Inc., North Hills, CA

Oseco, Broken Arrow, OK

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave,

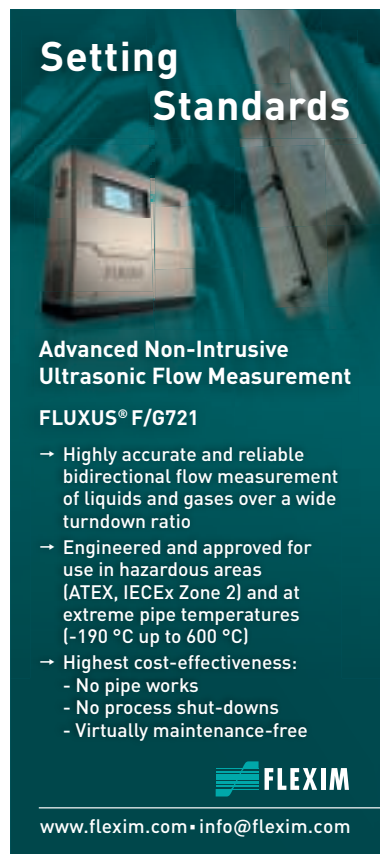
Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Alarms, solids level

Berthold Technologies GmbH & Co.KG, Bad Wildbad Conveyor Components Co., Material Control, Inc., Crosswell, MI

Monitor Technologies LLC, Elburn, IL

TankLink, a wholly-owned subsidiary of Telular Corporation, Chicago, IL



Setting Standards

Advanced Non-Intrusive Ultrasonic Flow Measurement

FLUXUS® F/6721

- Highly accurate and reliable bidirectional flow measurement of liquids and gases over a wide turndown ratio
- Engineered and approved for use in hazardous areas (ATEX, IECEx Zone 2) and at extreme pipe temperatures (-190 °C up to 600 °C)
- Highest cost-effectiveness:
 - No pipe works
 - No process shut-downs
 - Virtually maintenance-free

FLEXIM

www.flexim.com • info@flexim.com

Circle 25 on p. 190 or go to adlinks.chemengonline.com/56204-25

Alarms, temperature

Acromag, Inc., Wixom, MI

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Moore Industries International, Inc., North Hills, CA
TankLink, a wholly-owned subsidiary of Telular Corporation, Chicago, IL

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Flowmeters, coriolis

Bronkhorst High-Tech BV, Nijverheidsstraat 1A, Ruurlo NL-7261AK (+31 573458800; FAX: +31 573458808; e-mail: info@bronkhorst.com; web site: www.bronkhorst.com)

Flowmeters, differential pressure

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Badger Meter Europa GmbH, Neuffen

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infoCentral@badgermeter.com; web site: www.badgermeter.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

JUMO GmbH & Co. KG, Fulda
SAMSON Controls, Inc., Baytown, Texas
Universal Flow Monitors, Inc., Hazel Park, MI

Flowmeters, electromagnetic

Badger Meter Europa GmbH, Neuffen

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowmeters, magnetic

Burkert Fluid Control Systems, Charlotte, NC

Burkert Fluid Control Systems, Ingelfingen,

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowmeters, mass

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Berthold Technologies GmbH & Co.KG, Bad Wildbad
Bronkhorst High-Tech BV, Nijverheidsstraat 1A, Ruurlo NL-7261AK (+31 573458800; FAX: +31 573458808; e-mail: info@bronkhorst.com; web site: www.bronkhorst.com)

Brooks Instruments, Hatfield, PA

Delta M Corp., Oak Ridge, TN

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Heinrichs Messtechnik GmbH, Koeln

Kurz Instruments Inc., Monterey, CA

Matsushima Measure Tech, Des Plaines, IL

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21, Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714; e-mail: sales@rembe.de; web site: www.rembe.com)

— See our ad on page 19

Red Seal Measurement, Greenwood, SC

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC 28217 (704.716.7022; FAX: 704.716.7025; e-mail: info@rembe.us; web site: www.rembe.us)



SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Flowmeters, orifice plate

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Heinrichs Messtechnik GmbH, Koeln

SAMSON Controls, Inc., Baytown, Texas

Flowmeters, positive displacement

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Badger Meter Europa GmbH, Neuffen

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infoCentral@badgermeter.com; web site: www.badgermeter.com)

Brooks Instruments, Hatfield, PA

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Red Seal Measurement, Greenwood, SC

Flowmeters, propeller

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flowmeters, rotameters

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Brooks Instruments, Hatfield, PA

Cole-Parmer, Vernon Hills, IL

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Heinrichs Messtechnik GmbH, Koeln

Universal Flow Monitors, Inc., Hazel Park, MI

Flowmeters, turbine

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Badger Meter Europa GmbH, Neuffen

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infoCentral@badgermeter.com; web site: www.badgermeter.com)

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

V2 Flow Controls, Burr Ridge, Illinois

Flowmeters, ultrasonic

Accusonic Technologies, Inc., West Wareham, MA

Badger Meter Europa GmbH, Neuffen

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

Siemens Process Industries and Drives, Norcross, Georgia

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Flowmeters, variable area

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Badger Meter Europa GmbH, Neuffen

Brooks Instruments, Hatfield, PA

Cole-Parmer, Vernon Hills, IL

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Heinrichs Messtechnik GmbH, Koeln

Universal Flow Monitors, Inc., Hazel Park, MI

Flowmeters, vortex shedding

Badger Meter Europa GmbH, Neuffen

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Heinrichs Messtechnik GmbH, Koeln

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Flowmeters, weirs & flumes

Badger Meter Europa GmbH, Neuffen
Levelese, Inc, Denver, Colorado

Gages, density

Berthold Technologies GmbH & Co.KG, Bad Wildbad
Heinrichs Messtechnik GmbH, Koeln
Markland Specialty Engineering Ltd., Georgetown, SensoTech Inc., Wayne, New Jersey

Gages, filter

Midwesco Filter Resources, Inc., Winchester, VA

Gages, liquid level

Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Heinrichs Messtechnik GmbH, Koeln
Levelese, Inc, Denver, Colorado
TankLink, a wholly-owned subsidiary of Telular Corporation, Chicago, IL

TowerScan, Port Huron, MI

TowerScan, Sarnia,

VEGA Americas, Inc., Cincinnati, OH

VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)

— See our ad on page 111

Gages, liquid level, sanitary

Madison Co., Branford, CT

Gages, mechanical force

Sensor Technology Ltd, Banbury

Gages, nuclear radiation

TowerScan, Port Huron, MI

TowerScan, Sarnia,

Gages, pressure

Ashcroft Inc., Stratford, CT

Omega Engineering Inc., Stamford, Connecticut

Palmer Wahl Temperature Instruments, Asheville, North Carolina

Tel-Tru Manufacturing Co., Rochester, NY

VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)

— See our ad on page 111

WIKA Instrument, LP, Lawrenceville, GA

Gages, tank

Levelese, Inc, Denver, Colorado

TankLink, a wholly-owned subsidiary of Telular Corporation, Chicago, IL
VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)

— See our ad on page 111

WIKA Instrument, LP, Lawrenceville, GA

Gages, temperature

Ashcroft Inc., Stratford, CT

Palmer Wahl Temperature Instruments, Asheville, North Carolina

S-Products Inc., Fairfield, CT

TankLink, a wholly-owned subsidiary of Telular Corporation, Chicago, IL

Tel-Tru Manufacturing Co., Rochester, NY

WIKA Instrument, LP, Lawrenceville, GA

Gages, vacuum & differential pressure

Ashcroft Inc., Stratford, CT

TankLink, a wholly-owned subsidiary of Telular Corporation, Chicago, IL

VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)

— See our ad on page 111

WIKA Instrument, LP, Lawrenceville, GA

Gages, water

Levelese, Inc, Denver, Colorado

VEGA Americas, Inc., Cincinnati, OH

PRODUCT DIRECTORY

VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach,
77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail:
info.de@vega.com; web site: www.vega.com)
— See our ad on page 111

Glasses, furnace

Technical Glass Products, Painesville, OH

Glasses, sight flow

Technical Glass Products, Painesville, OH

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)
— See our ad on page 135

Indicators, bin level

Conveyor Components Co., Material Control, Inc., Crosswell, MI

Matsushima Measure Tech, Des Plaines, IL
Monitor Technologies LLC, Elburn, IL
VEGA Americas, Inc., Cincinnati, OH

VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach,
77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail:
info.de@vega.com; web site: www.vega.com)
— See our ad on page 111

Indicators, carbon monoxide

Sierra Monitor Corp., Milpitas, CA

Indicators, combustible gases

American Gas & Chemical Co Ltd, New Jersey
Clean Air Express Equipment, Palatine, IL
Sierra Monitor Corp., Milpitas, CA

Indicators, dewpoint or humidity

S-Products Inc., Fairfield, CT

Indicators, flow

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI

Auburn Systems, LLC, Danvers, MA

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infocentral@badgermeter.com; web site: www.badgermeter.com)

Brooks Instruments, Hatfield, PA

Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11711 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)
— See our ad on page 127

Monitor Technologies LLC, Elburn, IL

Red Seal Measurement, Greenwood, SC

Siemens Industry, Inc., Process Instrumentation & Analytics, Spring House, PA

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Universal Flow Monitors, Inc., Hazel Park, MI

Indicators, liquid level

Automation Products Inc. (Dynatrol Div.), Houston, TX
Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Levelese, Inc., Denver, Colorado

Madison Co., Branford, CT

Monitor Technologies LLC, Elburn, IL

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

TankLink, a wholly-owned subsidiary of Tetular Corporation, Chicago, IL

VEGA Americas, Inc., Cincinnati, OH

VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach,
77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail:
info.de@vega.com; web site: www.vega.com)
— See our ad on page 111

Indicators, mass flow

Brooks Instruments, Hatfield, PA

Clean Air Express Equipment, Palatine, IL

Conveyor Components Co., Material Control, Inc., Crosswell, MI

Delta M Corp., Oak Ridge, TN

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Red Seal Measurement, Greenwood, SC

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Indicators, moisture

A & D Weighing, San Jose, CA

MoistTech Corp., Sarasota, FL

Siemens Process Industries and Drives, Norcross, Georgia

Indicators, other

Schurter, Inc., Santa Rosa, CA

Sierra Monitor Corp., Milpitas, CA

Indicators, pressure

Ashcroft Inc., Stratford, CT

Brooks Instruments, Hatfield, PA

Tel-Tru Manufacturing Co., Rochester, NY

Indicators, solids level

Automation Products Inc. (Dynatrol Div.), Houston, TX
Conveyor Components Co., Material Control, Inc., Crosswell, MI

Monitor Technologies LLC, Elburn, IL

VEGA Americas, Inc., Cincinnati, OH

VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach,
77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail:
info.de@vega.com; web site: www.vega.com)
— See our ad on page 111

Indicators, specific gravity

Anton PAAR USA, Ashland, VA

Automation Products Inc. (Dynatrol Div.), Houston, TX

Red Seal Measurement, Greenwood, SC

SensoTech Inc., Wayne, New Jersey

Indicators, temperature

Acromag, Inc., Wixom, MI

Ashcroft Inc., Stratford, CT

Electronic Development Labs, Danville, VA

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

Hampshire Controls Corp., Dover, NH

Iron, Inc., Santa Cruz, CA

Omega Engineering Inc., Stamford, Connecticut

Raytek Corp., Santa Cruz, CA

S-Products Inc., Fairfield, CT

Tel-Tru Manufacturing Co., Rochester, NY

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Williamson Corporation, Concord, MA

Indicators, vacuum

Ashcroft Inc., Stratford, CT

Indicators, valve position

Hans Turck GmbH & Co. KG, Witzlebenstr. 7 Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)

Indicators, viscosity

Hydratron Ltd, Malton

LOAD CONTROLS, INC., 53 Technology Park Rd., Sturbridge, Massachusetts 01566 (888-600-3247; 508-347-2606; FAX: 508-347-2064; web site: www.loadcontrols.com)
— See our ad on page 25

Indicators, weight

A & D Weighing, San Jose, CA

Mettler-Toledo, Inc., Columbus, OH

Pacific Scale Co., Inc., Clackamas, OR

Thermistors

Electronic Development Labs, Danville, VA

GIC Thermodynamics, Charlevoix, MI

Temp-Pro Inc., Northampton, MA

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Thermocouples

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Clean Air Express Equipment, Palatine, IL

Instrumentation & controls

Cole-Parmer, Vernon Hills, IL

Electronic Development Labs, Danville, VA

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

GIC Thermodynamics, Charlevoix, MI

Harrop Industries, Inc., Columbus, OH

JUMO GmbH & Co. KG, Fulda

Moore Industries International, Inc., North Hills, CA

S-Products Inc., Fairfield, CT

Temp-Pro Inc., Northampton, MA

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Watlow, St. Louis, MO

Thermometers, bimetallic

Tel-Tru Manufacturing Co., Rochester, NY

Temp-Pro Inc., Northampton, MA

WIKA Instrument, LP, Lawrenceville, GA

Thermometers, dial

Tel-Tru Manufacturing Co., Rochester, NY

Temp-Pro Inc., Northampton, MA

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)
WIKA Instrument, LP, Lawrenceville, GA

Thermometers, digital

Palmer Wahl Temperature Instruments, Asheville, North Carolina

Raytek GmbH, Berlin

S-Products Inc., Fairfield, CT

Tel-Tru Manufacturing Co., Rochester, NY

Thermometers, electrical

Raytek Corp., Santa Cruz, CA

Temp-Pro Inc., Northampton, MA

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Thermometers, infrared

Omega Engineering Inc., Stamford, Connecticut

Palmer Wahl Temperature Instruments, Asheville, North Carolina

Williamson Corporation, Concord, MA

Thermometers, mercury

Palmer Wahl Temperature Instruments, Asheville, North Carolina

Thermometers, precision

Anton PAAR USA, Ashland, VA

CTP Corp., Northport, NY

Thermometers, recording

Raytek Corp., Santa Cruz, CA

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Thermometers, resistance temperature detectors

Electronic Development Labs, Danville, VA

GIC Thermodynamics, Charlevoix, MI

Heinrichs Messtechnik GmbH, Koeln

JUMO GmbH & Co. KG, Fulda

Moore Industries International, Inc., North Hills, CA

Palmer Wahl Temperature Instruments, Asheville, North Carolina

S-Products Inc., Fairfield, CT

Temp-Pro Inc., Northampton, MA

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Thermometers, surface

Electronic Development Labs, Danville, VA

Iron, Inc., Santa Cruz, CA

Raytek Corp., Santa Cruz, CA

Raytek GmbH, Berlin

S-Products Inc., Fairfield, CT

Temp-Pro Inc., Northampton, MA

Thermostats

LAUDA DR. R. WOBSE GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

S-Products Inc., Fairfield, CT

PRODUCT DIRECTORY

UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave., Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)

Thermowells

Electronic Development Labs, Danville, VA
GIC Thermodynamics, Chartrevoix, MI
Micromold Products, Inc., Yonkers, New York
Moore Industries International, Inc., North Hills, CA
Palmer Wahl Temperature Instruments, Asheville, North Carolina
S-Products Inc., Fairfield, CT
Tel-Tru Manufacturing Co., Rochester, NY
Temp-Pro Inc., Northampton, MA
UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave., Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)
WIKA Instrument, LP, Lawrenceville, GA

MEASUREMENT & TESTING EQUIPMENT

Alloy identification equipment

Acromag, Inc., Wixom, MI

Calibration gas standards

Clean Air Engineering, Palatine, IL
Clean Air Instrument Rental, Palatine, IL
SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Calibration & test equipment

A & D Weighing, San Jose, CA
ATS RheoSystems, Cannon Instrument Company, Borden-town, NJ
Ashcroft Inc., Stratford, CT
Atlas Material Testing Technology LLC, Mount Prospect, IL
Beamex, Inc., Marietta, GA
Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts
Clean Air Engineering, Palatine, IL
Clean Air Express Equipment, Palatine, IL
Electronic Development Labs, Danville, VA
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)
— See our ad on page 127

FRITSCH GmbH, Milling and Sizing, Idar-Oberstein
Irocon, Inc., Santa Cruz, CA
Koflo Corp., Cary, IL
Konica Minolta Sensing Americas, Ramsey, NJ
LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@laudda.de; web site: www.laudda.de)

McPherson, Chelmsford, Massachusetts
MoistTech Corp., Sarasota, FL
PR/ÜTECHNIK Dieter Busch AG , Ismaning,
Palmer Wahl Temperature Instruments, Asheville, North Carolina
Raytek Corp., Santa Cruz, CA
Raytek GmbH, Berlin
Sensor Technology Ltd, Banbury
SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)
Sierra Monitor Corp., Milpitas, CA
Systech Instruments Ltd (Systech Illinois), Theme
WIKA Instrument, LP, Lawrenceville, GA

Calorimeters

LECO Corporation, St. Joseph, MI

Cameras, high-speed

Raytek GmbH, Berlin

Chambers, test

Atlas Material Testing Technology LLC, Mount Prospect, IL
HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)
Koflo Corp., Cary, IL

McPherson, Chelmsford, Massachusetts
Q-Lab Corporation, Westlake, Ohio
Singleton Corp., Cleveland, OH
Thermionics Corp., Mansfield, MA
Thermotron, Holland, MI

Colorimeters

CHEMetrics Inc., Calverton, Virginia
Konica Minolta Sensing Americas, Ramsey, NJ
optek-Danulat, Inc., Germantown, WI

Corrosion measurement equipment

Applus RTD USA, Houston, TX
Metal Samples Co., Munford,
Singleton Corp., Cleveland, OH

Density-measuring equipment

Anton PAAR GmbH, Graz,
Anton PAAR USA, Ashland, VA
Automation Products Inc. (Dynatrol Div.), Houston, TX
Berthold Technologies GmbH & Co.KG, Bad Wildbad
Heinrichs Messtechnik GmbH, Koeln
JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)
K-Patents, Inc., Naperville, IL
Konica Minolta Sensing Americas, Ramsey, NJ

LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@laudda.de; web site: www.laudda.de)
Markland Specialty Engineering Ltd., Georgetown,
Red Seal Measurement, Greenwood, SC
SensoTech GmbH, Magdeburg-Barleben,
SensoTech Inc., Wayne, New Jersey
TowerScan, Port Huron, MI
TowerScan, Sarnia,

Detectors, interface
Automation Products Inc. (Dynatrol Div.), Houston, TX
FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)
— See our ad on page 127

Markland Specialty Engineering Ltd., Georgetown,
SensoTech Inc., Wayne, New Jersey
TowerScan, Port Huron, MI
TowerScan, Sarnia,

Detectors, leak
Auburn Systems, LLC, Danvers, MA
BS & B Safety Systems, Inc., Tulsa, OK
Durag Inc., Environmental Hardware, Mendota Heights, Minnesota
FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)
— See our ad on page 127

GOW-MAC Instrument Co., Bethlehem, PA
Mil-Ram Technology, Inc., Fremont, CA
Pfeiffer Vacuum, Inc., Nashua, NH
RKI Instruments, Inc., Union City, CA
SGB GmbH, Siegen
Sensor Electronics Corp., Minneapolis, MN
SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)
Sierra Monitor Corp., Milpitas, CA

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
— See our ad on page 98
Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA
USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Detectors, metal
Acromag, Inc., Wixom, MI
Magnetic Products, Inc., Highland, MI

Electrodes, ion-sensitive

Analytical Measurements, Chester, NJ

Instrumentation & controls

Electrodes, pH

Analytical Measurements, Chester, NJ
Omega Engineering Inc., Stamford, Connecticut
Van London-pHoenix Co., Houston, TX
Walchem, IWAKI America, Inc., Holliston, MA

Enclosures, instrument

REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGRD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)
— See our ad on page 17

The Industrial Controls Company, Inc.,

Flash points, automatic

Anton PAAR GmbH, Graz,

Fluidic systems

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)
— See our ad on page 127

Gas dilution systems

Clean Air Instrument Rental, Palatine, IL

Gas sampling bags

Clean Air Express Equipment, Palatine, IL
Clean Air Instrument Rental, Palatine, IL

Infrared Thermometer

EVEREST INTERSCIENCE, Oregon
Williamson Corporation, Concord, MA

Ion measurement or selection

Pfeiffer Vacuum, Inc., Nashua, NH
Van London-pHoenix Co., Houston, TX

Laser systems

Elos Fixturlaser AB, Molndal
Oxford Lasers, Inc., Shirley, MA
PR/ÜTECHNIK Dieter Busch AG , Ismaning,

Load cells

Hardy Process Solutions, Inc., Industrial Weighing, San Diego, CA
Kubota Corporation, Singapore
Load Cell Central, Pennsylvania
Omega Engineering Inc., Stamford, Connecticut
Schenck Process GmbH, Darmstadt
Sensor Technology Ltd, Banbury

Manometers

VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)
— See our ad on page 111

Meters, air

Clean Air Express Equipment, Palatine, IL
FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)
SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)
Universal Flow Monitors, Inc., Hazel Park, MI
V2 Flow Controls, Burr Ridge, Illinois

Meters, chlorine
CHEMetrics Inc., Calverton, Virginia

Meters, conductivity

Anton PAAR USA, Ashland, VA
Dr. Thiedig GmbH & Co KG, Berlin
Walchem, IWAKI America, Inc., Holliston, MA

Meters, displacement

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: infocentral@badgermeter.com; web site: www.badgermeter.com)
PR/ÜTECHNIK Dieter Busch AG , Ismaning,
Red Seal Measurement, Greenwood, SC

Meters, electrical

Escitac, Mesa, AZ

Meters, gas

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

V2 Flow Controls, Burr Ridge, Illinois

Meters, heat flow

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

Meters, oxygen

CHEMetrics Inc., Calverton, Virginia
Dr. Thiedig GmbH & Co KG, Berlin
RKI Instruments, Inc., Union City, CA

Meters, ozone

CHEMetrics Inc., Calverton, Virginia

Meters, pH

CHEMetrics Inc., Calverton, Virginia
Cole-Parmer, Vernon Hills, IL
Dr. Thiedig GmbH & Co KG, Berlin

Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)

Van London-pHoenix Co., Houston, TX
Walchem, IWAKI America, Inc., Holliston, MA

Meters, recording

Analytical Measurements, Chester, NJ

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: info@central@badgermeter.com; web site: www.badgermeter.com)

BADGER METER, INC., 6116 E. 15th St., Tulsa, Oklahoma 74112 (800-364-9876; 918-836-8411; FAX: 918-832-9962; e-mail: rcv@badgermeter.com; web site: www.badgermeter.com)

Meters, salinity

SensoTech Inc., Wayne, New Jersey

Meters, sludge

Markland Specialty Engineering Ltd., Georgetown,

Meters, surface tension

LAUDA DR. R. WOBSE GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Meters, turbidity

Sigrist Photometer AG, Ennetbuergen
optek-Danulat, Inc., Germantown, WI

Meters, ultrasonic

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

Georg Fischer Piping Systems Ltd., Schaffhausen 8201 (41-52-631-11-11; FAX: 41-52-631-28-75; e-mail: info_ps@georgfischer.com; web site: www.gfps.com)

SensoTech GmbH, Magdeburg-Barleben,

SensoTech Inc., Wayne, New Jersey
Siemens Process Industries and Drives, Norcross, Georgia

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

— See our ad on page 98

Meters, ultraviolet

Dymax Corp., Torrington, CT
optek-Danulat, Inc., Germantown, WI

Meters, vibration

PRÜFTECHNIK Dieter Busch AG, Ismaning,
Vibra-Metrics, div. of Mistras Holdings, Princeton Junction, NJ

Meters, water

BADGER METER, INC., P.O. Box 245036, Milwaukee, Wisconsin 53224-9536 (800-876-3837; 414-355-0400; FAX: 414-371-5932; e-mail: info@central@badgermeter.com; web site: www.badgermeter.com)

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 (800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCI@marcom@fluidcomponents.com; web site: www.fluidcomponents.com)

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

Myron L Company, 2450 Impala Drive, Carlsbad, California 92010 (760-438-2021; FAX: 760-931-9189; e-mail: sales@myronl.com; web site: www.myronl.com)

Red Seal Measurement, Greenwood, SC
Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA
Universal Flow Monitors, Inc., Hazel Park, MI
V2 Flow Controls, Burr Ridge, Illinois

Meters, zeta potential

Anton PAAR GmbH, Graz,
Anton PAAR USA, Ashland, VA

Permeation tubes

Clean Air Instrument Rental, Palatine, IL

Photometers

Guided Wave, Rancho Cordova, California
Konica Minolta Sensing Americas, Ramsey, NJ
Sias, New Castle, DE
Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA
optek-Danulat, Inc., Germantown, WI

Powder Testing

Freeman Technology Inc, Wayne, Pennsylvania

Pyrometers

EVEREST INTERSCIENCE, Oregon
Electronic Development Labs, Danville, VA
Iron, Inc., Santa Cruz, CA
Raytek Corp., Santa Cruz, CA
Raytek GmbH, Berlin
Williamson Corporation, Concord, MA

Refractometers

Anton PAAR GmbH, Graz,
Anton PAAR USA, Ashland, VA

FLEXIM AMERICAS, 250 V Executive Drive, Edgewood, NY 11717 (1 888 852 74 73 North America; 631-492-2300; FAX: 631-492-2117; e-mail: salesus@flexim.com; web site: www.flexim.com)

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

K-Patents, Inc., Naperville, IL

Rheometers

ATS RheoSystems, Cannon Instrument Company, Borden-town, NJ

Anton PAAR GmbH, Graz,
Anton PAAR USA, Ashland, VA

Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts

Davis-Standard, LLC, Pawcatuck, CT
Freeman Technology Inc, Wayne, Pennsylvania

Temperature Sensor

EVEREST INTERSCIENCE, Oregon
Hampshire Controls Corp., Dover, NH
Williamson Corporation, Concord, MA

Testers, cloud & pour point, automatic

Anton PAAR GmbH, Graz,

Testers, flash point

Anton PAAR GmbH, Graz,

Testers, hardness

Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts
Shimadzu Scientific Instruments, Columbia, MD

Testers, tensile strength

Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts
Shimadzu Scientific Instruments, Columbia, MD

Testing equipment, other

Atlas Material Testing Technology LLC, Mount Prospect, IL
Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts

CHEMetrics Inc., Calverton, Virginia

EVEREST INTERSCIENCE, Oregon

FOSS NIRSystems, Inc., Laurel, MD

G.R. Sprenger Engineering, Inc., Golden, CO

Harrop Industries, Inc., Columbus, OH

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

KRUSS GmbH, Marketing, Hamburg

Konica Minolta Sensing Americas, Ramsey, NJ

MoistTech Corp., Sarasota, FL

Newson Gale Ltd, Nottingham

Q-Lab Corporation, Westlake, Ohio

Raytek GmbH, Berlin

Rockwell Automation, Inc., Milwaukee, WI

Sensor Technology Ltd, Banbury

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)

Singleton Corp., Cleveland, OH

Systech Instruments Ltd (Systech Illinois), Thame

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte,

North Carolina 28273 (800-858-8727; 704-597-9070;

FAX: 704-583-1610; web site: www.tlv.com)

— See our ad on page 98

Thermotron, Holland, MI

UIC Inc., Joliet, IL

Timers

Midwesco Filter Resources, Inc., Winchester, VA

Transducers, heat flow

FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 60; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)

— See our ad on page 127

Viscometers, melt

Brookfield Engineering Laboratories, Inc., Middleboro,

Massachusetts

Hydramotion Ltd, Malton

LAUDA DR. R. WOBSE GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Viscosity or consistency instruments, other

ATS RheoSystems, Cannon Instrument Company, Borden-town, NJ

Anton PAAR GmbH, Graz,

Anton PAAR USA, Ashland, VA

Brookfield Engineering Laboratories, Inc., Middleboro,

Massachusetts

Cole-Parmer, Vernon Hills, IL

Hydramotion Ltd, Malton

LAUDA DR. R. WOBSE GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

LOAD CONTROLS, INC., 53 Technology Park Rd., Sturbridge, Massachusetts 01566 (888-600-3247; 508-347-2606; FAX: 508-347-2064; web site: www.loadcontrols.com)

— See our ad on page 25

Sensor Technology Ltd, Banbury

Voltmeters

Escitac, Mesa, AZ
Symmetric Research, Las Vegas, NV

X ray & gamma ray equipment

TowerScan, Sarنيا,

TowerScan, Port Huron, MI
TowerScan, Sarnia,

RECORDERS

Recorder parts & accessories

Analytical Measurements, Chester, NJ

Recorders, liquid flow

V2 Flow Controls, Burr Ridge, Illinois

Recorders, liquid level

Madison Co., Branford, CT
Met-Pro Global Pump Solutions, a CECO Environmental Company, Telford, Pennsylvania

Recorders, mass flow

SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)
V2 Flow Controls, Burr Ridge, Illinois

Recorders, pressure

Palmer Wahl Temperature Instruments, Asheville, North Carolina

Recorders, temperature

Cole-Parmer, Vernon Hills, IL
JUMO GmbH & Co. KG, Fulda
Omega Engineering Inc., Stamford, Connecticut
Palmer Wahl Temperature Instruments, Asheville, North Carolina
Raytek Corp., Santa Cruz, CA
UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)
Williamson Corporation, Concord, MA

Recorders, viscosity

Brookfield Engineering Laboratories, Inc., Middleboro, Massachusetts

TRANSMITTERS & DATA TRANSMISSION EQUIPMENT

Cables, fiberoptic

tec5USA, Plainview, NY

Cables, other

Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)

Converters, signal

Acromag, Inc., Wixom, MI
Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)
Moore Industries International, Inc., North Hills, CA
Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)
R. STAHL, Waldenburg
S-Products Inc., Fairfield, CT

Data Transmission, Wireless

DATA-LINC GROUP, Washington
Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)
Levelese, Inc., Denver, Colorado
Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)
R. STAHL, Waldenburg

Electrical equipment, intrinsic safety

HIMA Paul Hildebrandt GmbH + Co KG, Bruehl

Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)
Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)
R. STAHL, Waldenburg
The Industrial Controls Company, Inc.,

Radio remote control systems

Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)

Relays, time delay

Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)

Telemetry & data transmission systems

Moore Industries International, Inc., North Hills, CA

Transducers

Ashcroft Inc., Stratford, CT
Clean Air Instrument Rental, Palatine, IL
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 80; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)
— See our ad on page 127

Omega Engineering Inc., Stamford, Connecticut
Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)
R. STAHL, Waldenburg
Sensor Technology Ltd, Banbury

Transmitters, level

Berthold Technologies GmbH & Co.KG, Bad Wildbad
Burkert Fluid Control Systems, Ingelfingen,
Burkert Fluid Control Systems, Charlotte, NC
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)
HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)
Levelese, Inc., Denver, Colorado
Monitor Technologies LLC, Elburn, IL
Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)
— See our ad on page 111

Transmitters, mass flow

AW-Lake Company, Lake Monitors & AW Gear Meters, Franksville, WI
Berthold Technologies GmbH & Co.KG, Bad Wildbad
Bronkhorst High-Tech BV, Nijverheidsstraat 1A, Ruurlo NL-7261AK (+31 573458800; FAX: +31 573458808; e-mail: info@bronkhorst.com; web site: www.bronkhorst.com)
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)
FLEXIM, FLEXIBLE INDUSTRIEMESSTECHNIK GMBH, Wolfener Str. 36, Berlin, D-12681 (49 0 30 936 676 80; FAX: 49 0 30 936 676 80; e-mail: info@flexim.com; web site: www.flexim.com)
— See our ad on page 127

HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)

Transmitters, pressure

Ashcroft Inc., Stratford, CT
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)
HONEYWELL PROCESS SOLUTIONS, 2500 West Union Hills Drive, Phoenix, Arizona 85027 (877-466-3993; web site: www.honeywell.com/ps)
JUMO GmbH & Co. KG, Fulda
Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
Siemens Process Industries and Drives, Norcross, Georgia
Tel-Tru Manufacturing Co., Rochester, NY
UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)
VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com; web site: www.vega.com)
— See our ad on page 111

WIKA Instrument, LP, Lawrenceville, GA

Transmitters, pressure-critical

Ashcroft Inc., Stratford, CT

Transmitters, temperature

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
FCI-FLUID COMPONENTS INTERNATIONAL, 1755 La Costa Meadows Dr., San Marcos, California 92078 ((800) 854-1993; 760-744-6950; FAX: 760-736-6250; e-mail: FCImarcom@fluidcomponents.com; web site: www.fluidcomponents.com)
GIC Thermodynamics, Charlevoix, MI
Hans Turck GmbH & Co. KG, Witzlebenstr. 7, Muelheim an der Ruhr 45472 (+49 208 4952-0; FAX: +49 208 4952-264; e-mail: more@turck.com; web site: www.turck.com)
JUMO GmbH & Co. KG, Fulda
Moore Industries International, Inc., North Hills, CA
Omega Engineering Inc., Stamford, Connecticut
Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)
Phoenix Contact GmbH & Co.KG, Flachsmarktstr. 8, Blomberg 32825 (+49 (0)5235-300; FAX: +49 (0)5235-341200; e-mail: info@phoenixcontact.com; web site: www.phoenixcontact.com)
R. STAHL, Waldenburg
S-Products Inc., Fairfield, CT
Siemens Process Industries and Drives, Norcross, Georgia
Tel-Tru Manufacturing Co., Rochester, NY
UNITED ELECTRIC CONTROLS CO., 180 Dexter Ave, Watertown, Massachusetts 02471-9143 (617-926-1000; FAX: 617-926-2568; web site: www.ueonline.com)
WIKA Instrument, LP, Lawrenceville, GA

5 PROCESSING EQUIPMENT

- | | | | |
|-----|--|-----|--|
| 134 | Air conditioning & refrigeration equipment | 148 | Heat transfer media |
| 134 | Centrifuges | 148 | Heating & cooling equipment, other |
| 134 | Classifiers & gravity separators | 149 | Kilns, ovens & furnaces |
| 135 | Cooling tower systems | 150 | Mixing equipment for fluids |
| 135 | Custom fabricated equipment | 153 | Mixing equipment for solids & fluids |
| 136 | Dryers | 155 | Packings, trays for towers & columns |
| 139 | Dust collectors & separators | 155 | Process vessels & reactors |
| 140 | Electrochemical equipment | 158 | Reaction & separation equipment, other |
| 140 | Entrainment separation equipment | 159 | Screening equipment |
| 140 | Evaporators & crystallizers | 160 | Scrubbers |
| 142 | Filter media & aids | 161 | Size reduction equipment |
| 142 | Filtration equipment | 163 | Towers & columns |
| 145 | Heat exchangers, condensers & coolers | 164 | Water treatment equipment |

DISPLAY ADVERTISERS IN THIS SECTION

Ekato Process Technologies GmbH	151
Komline-Sanderson	137
Wyssmont Co. Inc	135

AIR CONDITIONING & REFRIGERATION EQUIPMENT

Air conditioners

BARTEC GmbH, Bad Mergentheim

Cryogenic equipment

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

SIAD Macchine Impianti, Bergamo

Dehumidifiers

Lectrodryer, Richmond, KY
Munters Corporation, Air Treatment, Amesbury, MA

Humidifiers

Armstrong International, Three Rivers, MI
Membrana, Charlotte, NC

Refrigeration equipment, chillers

CTP Corp., Northport, NY
GEA Refrigeration North America, York, PA
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

LAUDA DR. R. WOBSEY GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Mokon, Buffalo, NY

Pneumatech, Inc., Rock Hill, SC
PolyScience, Niles, IL
Thermonics Corp., Mansfield, MA

Refrigeration equipment, freezers

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

Refrigeration equipment & systems

CTP Corp., Northport, NY
GEA Refrigeration North America, York, PA
LAUDA DR. R. WOBSEY GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Lectrodryer, Richmond, KY
Mokon, Buffalo, NY

CENTRIFUGES

Centrifuge parts & accessories

Ferrum Inc., Centrifuge Technology, Houston, TX
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)
Sharpex Filters (I) Pvt. Ltd., Sales, Navimumbai
Tema Systems, Inc., Cincinnati, OH
Western States Machine Co., Hamilton, OH

Centrifuges, batch, automatic basket

Ferrum Inc., Centrifuge Technology, Houston, TX
KINESPIN, Division of Kinefac Corporation, Worcester, Massachusetts
Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)
Western States Machine Co., Hamilton, OH

Centrifuges, batch, perforated basket

ANDRITZ KMPT GmbH, Vierkirchen,
Ferrum Inc., Centrifuge Technology, Houston, TX
Heinkel Filtering Systems Inc., Swedesboro, New Jersey
Midwest Steel Company Inc., Houston, Texas
Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Western States Machine Co., Hamilton, OH

Centrifuges, continuous, conical angle, perforated basket

ANDRITZ KMPT GmbH, Vierkirchen,
Ferrum Inc., Centrifuge Technology, Houston, TX
Tema Systems, Inc., Cincinnati, OH
Western States Machine Co., Hamilton, OH

Centrifuges, continuous, pusher discharge

ANDRITZ KMPT GmbH, Vierkirchen,
B & P Process Equipment, Saginaw, MI
Ferrum Inc., Centrifuge Technology, Houston, TX
Tema Systems, Inc., Cincinnati, OH

Centrifuges, continuous, solid bowl, scroll discharge

B & P Process Equipment, Saginaw, MI
Ferrum Inc., Centrifuge Technology, Houston, TX
Flottweg SE, Vilsbiburg
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)
Tema Systems, Inc., Cincinnati, OH

Centrifuges, disc, nozzle discharge

Ferrum Inc., Centrifuge Technology, Houston, TX
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)

Centrifuges, disc, solid bowl

Ferrum Inc., Centrifuge Technology, Houston, TX
Flottweg SE, Vilsbiburg
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)
Tema Systems, Inc., Cincinnati, OH

Centrifuges, disc, valve discharge

Ferrum Inc., Centrifuge Technology, Houston, TX
Flottweg SE, Vilsbiburg
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)

Centrifuges, filter, continuous, screen bowl, scroll discharge

Aaron Process Equipment Co., Bensenville, IL
Ferrum Inc., Centrifuge Technology, Houston, TX
Tema Systems, Inc., Cincinnati, OH

Centrifuges, filter, inverting

Ferrum Inc., Centrifuge Technology, Houston, TX
Heinkel Filtering Systems Inc., Swedesboro, New Jersey
Sias, New Castle, DE
Western States Machine Co., Hamilton, OH

Centrifuges, laboratory or pilot plant

ANDRITZ KMPT GmbH, Vierkirchen,
B & P Process Equipment, Saginaw, MI
Ferrum Inc., Centrifuge Technology, Houston, TX
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)
Sias, New Castle, DE
Tema Systems, Inc., Cincinnati, OH
Western States Machine Co., Hamilton, OH

Centrifuges, liquid-liquid

B & P Process Equipment, Saginaw, MI
Ferrum Inc., Centrifuge Technology, Houston, TX
Flottweg SE, Vilsbiburg

GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)
Sharpex Filters (I) Pvt. Ltd., Sales, Navimumbai

Centrifuges, other

Ferrum Inc., Centrifuge Technology, Houston, TX
Western States Machine Co., Hamilton, OH

Centrifuges, solid basket

Ferrum Inc., Centrifuge Technology, Houston, TX
Flottweg SE, Vilsbiburg
KINESPIN, Division of Kinefac Corporation, Worcester, Massachusetts
Western States Machine Co., Hamilton, OH

CLASSIFIERS & GRAVITY SEPARATORS

Clarifiers, flotation

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North America; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Clarifiers, settling

Outotec (USA), Inc., Jussup, Maryland
Pollution Control Systems, Inc., Milford, OH
Westech Engineering Inc., Salt Lake City, UT

Classifiers, air

AAAMachine, Inc., Des Plaines, IL
Buhler Inc., Minneapolis, MN
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
Kemutech Group, Inc., Bristol, PA
Metso Minerals Industries, Inc., York, PA
Prater-Sterling, Bollingbrook, IL
Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

Classifiers, cyclone

AAAMachine, Inc., Des Plaines, IL
AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

Classifiers, mechanical, magnetic

Industrial Magnetics, Inc., Boyne City, Michigan

Classifiers, mechanical, screening

AAAMachine, Inc., Des Plaines, IL
AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
Kason Corp., Millburn, New Jersey

Classifiers, mechanical, vibrating

Kason Corp., Millburn, New Jersey
MM Industries, Inc., Vorti-Siv, Salem, OH

Decanters

Flottweg SE, Vilsbiburg
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)

Liquid-liquid processing

Flottweg SE, Vilsbiburg
Franken Filtertechnik KG, Germany, Huerth
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Particle size control systems

FRITSCH GmbH, Milling and Sizing, Idar-Oberstein
G.R. Sprenger Engineering, Inc., Golden, CO
Modern Process Equipment, Inc., Chicago, IL
Prater-Sterling, Bollingbrook, IL

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)
Sympatec GmbH, System | Partikel | Technik | Clausthal-Zellerfeld

Thickeners, centrifugal

Flottweg SE, Vilsbiburg
GEA Mechanical Equipment US, Inc., GEA Westfalia Separator Division, Northvale, NJ
GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+49-2522-77-0; FAX: +49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)

Thickeners, gravity

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
 See our ad on page 137

Outotec (USA), Inc., Jussup, Maryland
Westech Engineering Inc., Salt Lake City, UT

Thickeners, rake or sedimentation

AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
Westech Engineering Inc., Salt Lake City, UT

COOLING TOWER SYSTEMS

Cooling towers

CU SERVICES LLC, Elk Grove, IL
Delta Cooling Towers Inc., Roxbury Township, NJ
 Mokon, Buffalo, NY
PAHARPUR COOLING TOWERS LTD, Paharpur House, 8/1/B Diamond Harbour Road, Kolkatta, 700027 (+913340133000; FAX: +913340133499; e-mail: pectccu@paharpur.com; web site: www.paharpur.com)
 See our ad on page 84

SPX Cooling Technologies, Overland Park, KS

Cooling towers, repair & upgrade

SPX Cooling Technologies, Overland Park, KS

Drift eliminators, cooling tower

Coastal Technologies Inc., Hampton, South Carolina
Delta Cooling Towers Inc., Roxbury Township, NJ
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
SPX Cooling Technologies, Overland Park, KS

Spray nozzles, cooling tower

BETE FOG NOZZLE INC., 50 Greenfield St., Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

PNR AMERICA, LLC, Poughkeepsie, NY
SPX Cooling Technologies, Overland Park, KS

CUSTOM FABRICATED EQUIPMENT

Castings, foundries

Clearfield Machine Co., Clearfield, PA
Wall Colmonoy Corporation, Madison Heights, MI

Claddings & coatings, custom

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
 See our ad on page 61

Equipment, process, custom

Bepex International LLC, Minneapolis, MN
CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)
 See our ad on page 6

Chematur Ecoplanning OY, Porl, Cobey, Buffalo, New York

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
 See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)
 See our ad on page 151

FABRICATED PLASTICS LIMITED, MAPLE
FEECO International, Inc., Green Bay, WI
FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)
 See our ad on page 3

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
 See our ad on page 137

Liquid Process Systems, inc., Indian Trail, North Carolina
Mars Mineral, Mars, PA
Material Transfer & Storage Inc., Allegan, MI
Mokon, Buffalo, NY

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
 See our ad on page 15

PSL USA, Boise, ID
Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)
 See our ad on page 24

Pope Scientific, Inc., Saukville, Wisconsin
Powder Systems Ltd, Liverpool
Sahyadri Engineering Corporation

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)
SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.processsystems.sandvik.com)
 tec5USA, Plainview, NY

Equipment, process, custom, cryogenic

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
 See our ad on page 61

LAUDA DR. R. WOBSE GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Modern Process Equipment, Inc., Chicago, IL
NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

Pope Scientific, Inc., Saukville, Wisconsin
RAS Process Equipment Inc., Robbinsville, NJ

Extrusions, custom

Davis-Standard, LLC, Pawcatuck, CT

Formings, exotic metal, custom

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
 See our ad on page 61

Lining applications, custom

Abresist Kalenborn Corporation, Urbana, IN

For lowest cost trouble-free drying the Wyssmont® TURBO-DRYER® Dryer is best!

Gives the lowest cost unattended trouble-free operation with best product and very low maintenance

Actual comments by users:

- "We turn it on and forget it!" — most users
- "All of the product out of it has been on-spec." — most users
- "It is the best piece of equipment in our plant!" — most users
- "The Wyssmont® Dryer needs no operator attention and no maintenance" — by a project engineer who bought 4 of them over 40 years
- "You make a fantastic dryer. It was the easiest equipment to start-up in our whole plant. All of the product out of it from the very beginning was on specification" — Chief start-up engineer for a pesticide plant



Crystals
Granules
Pellets
Beads

Wyssmont Company, Inc.
 1470 Bergen Boulevard
 Fort Lee, NJ 07024
 201-947-4600
 FAX 201-947-0324
 EMAIL sales@wyssmont.com
 WEB www.wyssmont.com

IT PAYS TO BUY THE BEST

Wyssmont®

Circle 34 on p. 190 or go to adlinks.chemengonline.com/56204-34

Koch Knight, LLC, East Canton, Ohio

Pipe & pipe systems, custom

Abrüstet Kalenborn Corporation, Urbana, IN
Cobey, Buffalo, New York
Davis-Standard, LLC, Pawcatuck, CT
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

FABRICATED PLASTICS LIMITED, MAPLE

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliester 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: sales@spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Spaltech International Inc., Halton Hills, Team Industries, Inc., Kaukauna, WI

Plastic fabrication, custom

FABRICATED PLASTICS LIMITED, MAPLE
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Ososso, Michigan

Pultrusion, custom

Creative Pultrusions, Inc., Alum Bank, PA

Reinforced-plastics fabrication, custom

Bustin Industrial Products, East Stroudsburg, PA
Creative Pultrusions, Inc., Alum Bank, PA
FABRICATED PLASTICS LIMITED, MAPLE
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Ososso, Michigan

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

ZCL Dualam, Inc., Edmonton,

DRYERS

Dryer parts & accessories

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)

Bepex International LLC, Minneapolis, MN

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Lectrodryer, Richmond, KY

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, V cone

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, air

Bepex International LLC, Minneapolis, MN
LA-MAN Corp., Mazzeppa, MN
Lectrodryer, Richmond, KY
Leister Technologies AG, Kaegiswil
SIAD Macchine Impianti, Bergamo
SPX Flow Technology, Ocala, FL
Sweet Manufacturing Company, Springfield, OH

Dryers, apron

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Dryers, batch

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Gebrueder Loedige Maschinenbau GmbH, Paderborn
JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Procedyne Corp., New Brunswick, NJ
Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai

Spray Drying Systems, Inc., Eldersburg, MD

Dryers, belt

AKW Apparate & Verfahren GmbH, Hirschau, Bavaria
AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)
AWT World Trade Inc., Chicago, IL

BERNDORF BAND GMBH, Leobersdorferstr. 26, Berndorf, 2560 (43-2672-800-0; FAX: 43-2672-84176; e-mail: band@berndorf.at; web site: www.berndorf-band.at)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Steri Technologies Inc., Bohemia, NY

Dryers, centrifugal

Bepex International LLC, Minneapolis, MN
JLS International, Inc., Charlotte, North Carolina
KINESPIN, Division of Kinefac Corporation, Worcester, Massachusetts

Maag Pump Systems AG, Oberrglatt / ZH, Metsu Minerals Industries, Inc., York, PA
Singleton Corp., Cleveland, OH
Spray Drying Systems, Inc., Eldersburg, MD
Tema Systems, Inc., Cincinnati, OH
Western States Machine Co., Hamilton, OH

Dryers, chamber

EDWARDS US HEADQUARTERS, Sanborn, NY
McGill AirPressure LLC, Columbus, OH

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, closed circuit

Bepex International LLC, Minneapolis, MN
Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Dederit Corporation, Homewood, Illinois
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Lectrodryer, Richmond, KY
Procedyne Corp., New Brunswick, NJ
Spray Drying Systems, Inc., Eldersburg, MD
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, conical, vacuum

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EDWARDS US HEADQUARTERS, Sanborn, NY
EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str. 37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Heinkel Filtering Systems Inc., Swedesboro, New Jersey
Hosokawa Micron B.V., Mixing, Drying & Agglomeration, Doetinchem,

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

McGill AirPressure LLC, Columbus, OH
Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai

Dryers, continuous

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)
ANDRITZ Gouda, Waddinxveen

AVA-Americas, Herrsching,
AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Bepex International LLC, Minneapolis, MN
Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Cober, Inc., Stratford, CT
EDWARDS US HEADQUARTERS, Sanborn, NY
Epcos Industrial Systems, LP, The Woodlands, TX
FECCO International, Inc., Green Bay, WI

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Gebrueder Loedige Maschinenbau GmbH, Paderborn
Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

Hosokawa Micron B.V., Mixing, Drying & Agglomeration, Doetinchem,
Kason Corp., Millburn, New Jersey

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)
Lectrodryer, Richmond, KY

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Procedyne Corp., New Brunswick, NJ
SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

Spray Drying Systems, Inc., Eldersburg, MD
Steri Technologies Inc., Bohemia, NY
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, conveyor

AWT World Trade Inc., Chicago, IL
Bepex International LLC, Minneapolis, MN
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)
Cober, Inc., Stratford, CT

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

Dryers, desiccant, disposable cartridge

SPX Flow Technology, Ocala, FL

Dryers, desiccant, package unit

AAAmachine, Inc., Des Plaines, IL
Lectrodryer, Richmond, KY
Munters Corporation, Air Treatment, Amesbury, MA
Pneumatech, Inc., Rock Hill, SC
SPX Flow Technology, Ocala, FL

Dryers, drum

ANDRITZ Gouda, Waddinxveen
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)

See our ad on page 61

Encon Evaporators, Hooksett, NH
FEECO International, Inc., Green Bay, WI
GEA Denmark (GEA Process Engineering A/S), Nj/Tirskovvej 1b, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)
Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania
JLS International, Inc., Charlotte, North Carolina

Dryers, drum, rotary vacuum

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)

See our ad on page 61

ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

McGill AirPressure LLC, Columbus, OH
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, electric

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Cober, Inc., Stratford, CT
Encon Evaporators, Hooksett, NH
Lectrodryer, Richmond, KY

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, flash

Bepex International LLC, Minneapolis, MN
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Dedert Corporation, Homewood, Illinois
GEA Denmark (GEA Process Engineering A/S), Nj/Tirskovvej 1b, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)
Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

Hosokawa Micron B.V., Mixing, Drying & Agglomeration, Doetinchem,
Spray Drying Systems, Inc., Eldersburg, MD
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, fluidized bed

ANDRITZ Gouda, Waddinxveen
Bepex International LLC, Minneapolis, MN
Buhler Inc., Minneapolis, MN
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CPFD-Software, Albuquerque, New Mexico
Dedert Corporation, Homewood, Illinois

Dynamic Air Inc., St. Paul, MN

GEA Denmark (GEA Process Engineering A/S), Nj/Tirskovvej 1b, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)

Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

Kason Corp., Millburn, New Jersey
Kinergy Corp., Louisville, KY

NEUHAUS NEOTECH Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotech.de; web site: www.neuhaus-neotech.de)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Procedyne Corp., New Brunswick, NJ
Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai
Spray Drying Systems, Inc., Eldersburg, MD
Sweet Manufacturing Company, Springfield, OH

Dryers, freeze

EDWARDS US HEADQUARTERS, Sanborn, NY

Dry. Heat. Cool. Filter. Wash. Dewater.

Komline-Sanderson develops, designs and manufactures innovative solutions for industrial process/production filtration, drying and heat transfer applications. For industrial and municipal wastewater treatment plants we offer clarification, sludge dewatering and sludge drying technology.

Our experience ranges from simple one-machine installations to complex multi-step processes and systems.



Paddle Dryer • Paddle Processor • Paddle Cooler

- indirect heating using steam or thermal fluid
- indirect cooling with water/glycol
- high heat transfer rates
- low residual moisture (solvent)
- uniform heating and cooling
- controlled environment



Vacuum Filters

- continuous filtration
- thin or thick slurries
- corrosive slurries
- cake washing



Rotary Atomizer

- spray dryers
- dry scrubbers
- direct drive, variable speed



e-mail: info@komline.com
call: **1-800-CALL 4 K-S**
(1-800-225-5457)
web: www.komline.com



Komline-Sanderson

Circle 27 on p. 190 or go to adlinks.chemengonline.com/56204-27

Dryers, gas

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Cober, Inc., Stratford, CT
Lectrodryer, Richmond, KY
Pneumatech, Inc., Rock Hill, SC
SPX Flow Technology, Ocala, FL

Dryers, infrared

AWT World Trade Inc., Chicago, IL
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

McGill AirPressure LLC, Columbus, OH

Dryers, microwave

Cober, Inc., Stratford, CT
Progressive Recovery Inc., Duplo, IL

Dryers, oxygen-enriched air

AirSep Corp., A Chart Industries Company, A Chart Industries Company, Buffalo, New York

Dryers, paddle

ANDRITZ Gouda, Waddinxveen
AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Dynamic Air Inc., St. Paul, MN
Encon Evaporators, Hookssett, NH
GEA Denmark (GEA Process Engineering A/S), Nj/Tirskovvej 1b, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)
Heinkel Filtering Systems Inc., Swedesboro, New Jersey
ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

McGill AirPressure LLC, Columbus, OH
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, pan

EDWARDS US HEADQUARTERS, Sanborn, NY
JLS International, Inc., Charlotte, North Carolina
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wys-smont.com)

See our ad on page 135

Dryers, radiant heat

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Diamond Refractory Services, Texas
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wys-smont.com; web site: www.wys-smont.com)

See our ad on page 135

Dryers, refrigerated air

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

LA-MAN Corp., Mazeppa, MN
Lectrodryer, Richmond, KY

Pneumatech, Inc., Rock Hill, SC

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wys-smont.com; web site: www.wys-smont.com)

See our ad on page 135

Dryers, ring

Dedert Corporation, Homewood, Illinois

Dryers, rotary

Bepex International LLC, Minneapolis, MN
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EDWARDS US HEADQUARTERS, Sanborn, NY
FECCO International, Inc., Green Bay, WI

GEA Denmark (GEA Process Engineering A/S), Nj/Tirskovvej 1b, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)

Harper International, Buffalo, New York
Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

McGill AirPressure LLC, Columbus, OH
Metso Minerals Industries, Inc., York, PA
Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, screw flight

Bepex International LLC, Minneapolis, MN
EKATO RUEHR-UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Dryers, shelf, vacuum

EDWARDS US HEADQUARTERS, Sanborn, NY
ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

JLS International, Inc., Charlotte, North Carolina
McGill AirPressure LLC, Columbus, OH
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai
Steri Technologies Inc., Bohemia, NY

Dryers, spiral screw

ANDRITZ Gouda, Waddinxveen
Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR-UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, spray

AAArmachine, Inc., Des Plaines, IL
Aaron Process Equipment Co., Bensenville, IL
Dedert Corporation, Homewood, Illinois
Evaporator Dryer Technologies, Hammond, Wisconsin
Fujisaki Electric, Des Plaines, IL

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

PNR AMERICA, LLC, Poughkeepsie, NY
Spray Drying Systems, Inc., Eldersburg, MD
Spraying Systems Co., Wheaton, IL

Dryers, steam jacketed

Bepex International LLC, Minneapolis, MN
Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

GEA Denmark (GEA Process Engineering A/S), Nj/Tirskovvej 1b, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Procedyne Corp., New Brunswick, NJ

Dryers, steam tube

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)
GEA Denmark (GEA Process Engineering A/S), Nj/Tirskovvej 1b, Skanderborg, 8660 (+45 7015 2200; e-mail: chemical@gea.com; web site: www.gea.com)
McGill AirPressure LLC, Columbus, OH

Dryers, suspension

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wys-smont.com; web site: www.wys-smont.com)

See our ad on page 135

Dryers, tray

PSL USA, Boise, ID
Powder Systems Ltd, Liverpool

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, tray, vacuum

EDWARDS US HEADQUARTERS, Sanborn, NY
ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

McGill AirPressure LLC, Columbus, OH

PSL USA, Boise, ID

Powder Systems Ltd, Liverpool

Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai

Steri Technologies Inc., Bohemia, NY

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, tumble

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EDWARDS US HEADQUARTERS, Sanborn, NY

ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, tunnel

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Dryers, vacuum

ANDRITZ Gouda, Waddinxveen

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Bepex International LLC, Minneapolis, MN

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

ROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.roll.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EDWARDS US HEADQUARTERS, Sanborn, NY

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Gebrueder Loedige Maschinenbau GmbH, Paderborn
Hosokawa Micron B.V., Mixing, Drying & Agglomeration, Doetinchem,

ITALVACUUM SRL, Via Stroppiana No. 3, Turin, Italy, 10071 (+39-011-4704651; FAX: 39-011-4701010; e-mail: marketing@italvacuum.com; web site: www.italvacuum.com)

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

McGill AirPressure LLC, Columbus, OH

PSL USA, Boise, ID

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Pope Scientific, Inc., Saukville, Wisconsin

Powder Systems Ltd, Liverpool

Steri Technologies Inc., Bohemia, NY

Dryers, vacuum pan

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Dryers, vertical

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Spray Drying Systems, Inc., Eldersburg, MD
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Dryers, vibrating

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Kason Corp., Millburn, New Jersey

Kinergy Corp., Louisville, KY

DUST COLLECTORS & SEPARATORS

Baghouses

Ambient Engineering Inc., Rocky Hill, NJ
American Fabric Filter Co., Wesley Chapel, FL

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

Buhler Inc., Minneapolis, MN

Evaporator/Dryer Technologies, Hammond, Wisconsin
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

Schenck Process, Kansas City, MO

Scientific Dust Collectors, Alsip, IL
Turner EnviroLogic, Inc., Deerfield Beach, FL

Dust collector parts & accessories

American Fabric Filter Co., Wesley Chapel, FL
Auburn Systems, LLC, Danvers, MA
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

Midwesco Filter Resources, Inc., Winchester, VA

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

See our ad on page 15

Scientific Dust Collectors, Alsip, IL

Dust collectors, bag filtering

Ambient Engineering Inc., Rocky Hill, NJ

American Fabric Filter Co., Wesley Chapel, FL

Bionomic Industries Inc., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

Buhler Inc., Minneapolis, MN

CYCLONAIRE CORP., P.O. Box 366, York, Nebraska 68467 (800-445-0730; 402-362-2000; FAX: 402-362-2001; e-mail: sales@cyclonaire.com; web site: www.cyclonaire.com)

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Midwesco Filter Resources, Inc., Winchester, VA

Scientific Dust Collectors, Alsip, IL

Turner EnviroLogic, Inc., Deerfield Beach, FL

Dust collectors, cartridge

AIRLANCO, Falls City, NE

Dynamic Air Inc., St. Paul, MN

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

See our ad on page 15

Scientific Dust Collectors, Alsip, IL

Turner EnviroLogic, Inc., Deerfield Beach, FL

Vector Technologies Ltd., Milwaukee, WI

Dust collectors, centrifugal

Advanced Cyclone Systems, S. A., Porto

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

Scientific Dust Collectors, Alsip, IL

Turner EnviroLogic, Inc., Deerfield Beach, FL

Dust collectors, cyclone

AIRLANCO, Falls City, NE

Advanced Cyclone Systems, S. A., Porto

Ambient Engineering Inc., Rocky Hill, NJ

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

Buhler Inc., Minneapolis, MN

FEECO International, Inc., Green Bay, WI

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

KIRK Process Solutions Ltd, Walton-on-Thames

Scientific Dust Collectors, Alsip, IL

Turner EnviroLogic, Inc., Deerfield Beach, FL

Dust collectors, electrostatic precipitators

Advanced Cyclone Systems, S. A., Porto

Ambient Engineering Inc., Rocky Hill, NJ

BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com) See our ad on page 15

Dust collectors, oil type

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Dust collectors, other

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

Martin Engineering, Neponset, IL
Scientific Dust Collectors, Alsip, IL

Dust collectors, pulse jet

AIRLANCO, Falls City, NE

Ambient Engineering Inc., Rocky Hill, NJ

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

Buhler Inc., Minneapolis, MN

Evaporator Dryer Technologies, Hammond, Wisconsin
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

FLEXICON CORP., 2400 Emrick Blvd., Bethlehem, Pennsylvania 18020-8006 (1 888 FLEXICON; 610-814-2400; FAX: 610-814-0600; e-mail: sales@flexicon.com; web site: www.flexicon.com)

See our ad on page 3

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com) See our ad on page 15

Schenck Process, Kansas City, MO

Scientific Dust Collectors, Alsip, IL

Vector Technologies Ltd., Milwaukee, WI

Dust collectors, tray type

Advanced Industrial Technology Corp., Paramus, NJ
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

Turner EnviroLogic, Inc., Deerfield Beach, FL

Dust collectors, tubular

Turner EnviroLogic, Inc., Deerfield Beach, FL

Dust collectors, wet

AAAmachine, Inc., Des Plaines, IL

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY,

Osawosso, Michigan

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

Dust removal equipment

AWT World Trade Inc., Chicago, IL

Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY,

Osawosso, Michigan

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com) See our ad on page 15

Scientific Dust Collectors, Alsip, IL

Wet Electrostatic precipitators

BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)

ELECTROCHEMICAL EQUIPMENT

Electrodes: anodes & cathodes

Denver Mineral Engineers, Inc., Littleton, CO

Lightning Eliminators & Consultants, Inc., Boulder, CO

Electrolytic cells

Denver Mineral Engineers, Inc., Littleton, CO

PCA GmbH, Heusweiler

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

ENTRAINMENT SEPARATION EQUIPMENT

Defoamers, physical

Coastal Technologies Inc., Hampton, South Carolina

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: + 49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Mist eliminators

AMACS, Houston, TX

Advanced Industrial Technology Corp., Paramus, NJ

Ambient Engineering Inc., Rocky Hill, NJ

CECO Filters, a CECO Environmental Company, Telford,

Pennsylvania

Coastal Technologies Inc., Hampton, South Carolina

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY,

Osawosso, Michigan

Hilliard Corp., Elmira, NY

Hudson Products Corp., Houston, TX

KIRK Process Solutions Ltd, Walton-on-Thames



KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.koch-glitsch.com)

Spraying Systems Co., Wheaton, IL

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Traps, air

Armstrong International, Three Rivers, MI

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; FAX: 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

EVAPORATORS & CRYSTALLIZERS

Crystallizers, Oslo Krystal

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

GEA France,

Crystallizers, cooling

AVA-HUEP GMBH U. CO. KG, Heinesstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

GEA France,

GEA Netherlands Äos-Hertogenbosch, 's-Hertogenbosch, **SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH**, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Crystallizers, evaporative

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Chematur EcoPlanning OY, Pori,

Dedert Corporation, Homewood, Illinois

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

GEA France,

Crystallizers, freeze

GEA Netherlands Äos-Hertogenbosch, 's-Hertogenbosch, **SULZER CHEMTECH LTD**, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Crystallizers, melt

GEA Netherlands Äos-Hertogenbosch, 's-Hertogenbosch,

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.process-systems.sandvik.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Crystallizers, scraped surface

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: + 49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

GEA Netherlands Äos-Hertogenbosch, 's-Hertogenbosch,

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Crystallizers, vacuum

Chematur EcoPlanning OY, Pori,

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: + 49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

GEA France,

Evaporative systems, mechanical recompression

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Chematur EcoPlanning OY, Pori,

Dedert Corporation, Homewood, Illinois

Encon Evaporators, Hooksett, NH

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Evaporative systems, multiple effect

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Chematur EcoPlanning OY, Pori,

Dedert Corporation, Homewood, Illinois

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Evaporator Dryer Technologies, Hammond, Wisconsin

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

Schutte & Koerting, Treviso, PA

Evaporative systems, thermal recompression

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)



CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

Dedert Corporation, Homewood, Illinois

Encon Evaporators, Hooksett, NH

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Schutte & Koerting, Treviso, PA

Evaporators, agitated film

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

JLS International, Inc., Charlotte, North Carolina

Pope Scientific, Inc., Saukville, Wisconsin

Evaporators, climbing film

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Evaporators, falling film



ALAUQA, Inc.

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Chematur EcoPlanning OY, Pori,

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Evaporator Dryer Technologies, Hammond, Wisconsin

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GEA PHE Systems, York, PA
GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Pope Scientific, Inc., Saukville, Wisconsin

Evaporators, flash

Advanced Industrial Technology Corp., Paramus, NJ
Caloris Engineering, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Chematur EcoPlanning OY, Pori,

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Pope Scientific, Inc., Saukville, Wisconsin

Evaporators, forced circulation

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

CG Thermal LLC, Twinsburg, Ohio
CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Chematur EcoPlanning OY, Pori,

Dedert Corporation, Homewood, Illinois
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GIG Karasek GmbH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Evaporators, horizontal tube

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

CALORIS ENGINEERING, 8649 Commerce Drive,

Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

Evaporators, low temperature

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Pope Scientific, Inc., Saukville, Wisconsin

Evaporators, plate type

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GEA PHE Systems, York, PA

Evaporators, short path

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

JLS International, Inc., Charlotte, North Carolina

Pope Scientific, Inc., Saukville, Wisconsin

Evaporators, thin film

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

CTP Corp., Northport, NY

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

JLS International, Inc., Charlotte, North Carolina

Pope Scientific, Inc., Saukville, Wisconsin

Evaporators, vertical long tube

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

Evaporators, vertical short tube (calandria)

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

GEA France,

Evaporators, waste water

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Encon Evaporators, Hooksett, NH
GEA France,

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Evaporators, wiped film

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

JLS International, Inc., Charlotte, North Carolina
Pope Scientific, Inc., Saukville, Wisconsin

Flakers, drum

ANDRITZ Gouda, Waddinxveen

FILTER MEDIA & AIDS

Felt, filter

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Filter aids, activated carbon

Jacobi Carbons, Inc., Columbus, OH
TIGG Corporation, Oakdale, PA

Filter aids, diatomaceous earth

Argonide Corporation, Sanford, FL

Filter aids, zeolite

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

TIGG Corporation, Oakdale, PA

Filter bags, natural fiber

American Fabric Filter Co., Wesley Chapel, FL

Filter bags, synthetic fiber

American Fabric Filter Co., Wesley Chapel, FL
Sefar Inc., Buffalo, New York

Filter cloth, acidproof

CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Filter cloth, alkaliproof

CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Filter cloth, cotton

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Filter cloth, glass

CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

Filter cloth, metallic

G Bopp USA Inc., Wappingers Falls, NY
MM Industries Inc., Vort-Siv, Salem, OH
Tema Systems, Inc., Cincinnati, OH

Filter cloth, natural fiber

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Filter cloth, synthetic fiber

CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

MM Industries Inc., Vort-Siv, Salem, OH
Sefar Inc., Buffalo, New York

Filter media, other

Applied Porous Technologies, Inc., Tariffville, CT
CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

Hilliard Corp., Elmira, NY
KDF Fluid Treatment, Inc., Three Rivers, MI

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Mefiag, a CECO Environmental Company, Owosso, Michigan

Meissner Filtration Products, Camarillo, California
Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

Sefar Inc., Buffalo, New York
TIGG Corporation, Oakdale, PA
ts-systemfilter gmbh, Ahorn-Berolzeim

Pads, filter

CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

Paper, filter

Mefiag, a CECO Environmental Company, Owosso, Michigan

Plates, filter

G Bopp USA Inc., Wappingers Falls, NY

Tubes, filter

Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

Sefar Inc., Buffalo, New York
ts-systemfilter gmbh, Ahorn-Berolzeim

FILTRATION EQUIPMENT

Biofilters

Ambient Engineering Inc., Rocky Hill, NJ
HEE-DUALL, a CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
Hepa Corporation, Anaheim, CA

Dewatering, mechanical press

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Metsu Minerals Industries, Inc., York, PA
Steri Technologies Inc., Bohemia, NY

Filter housings

Argonide Corporation, Sanford, FL
Enerquip, LLC, Medford, WI
Filtru-Systems Co., Farmington Hills, Michigan
Freudenberg Filtration Technologies SE & Co. KG, Weinheim

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflow-control.com)

JLS International, Inc., Charlotte, North Carolina
Keystone Filter, a CECO Environmental Company, Telford, Pennsylvania

Liquid Process Systems, Inc., Indian Trail, North Carolina
Meissner Filtration Products, Camarillo, California
SPX Flow Technology, Ocala, FL
ts-systemfilter gmbh, Ahorn-Berolzeim

Filter parts & accessories

American Fabric Filter Co., Wesley Chapel, FL
CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

Hilliard Corp., Elmira, NY
Industrial Magnetics, Inc., Boyne City, Michigan

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygo.com; web site: www.jaygo.com)

Keystone Filter, a CECO Environmental Company, Telford, Pennsylvania

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

LA-MAN Corp., Mazeppa, MN
Liquid Filtration Specialist, LLC, Texas
Mefiag, a CECO Environmental Company, Owosso, Michigan

Midwesco Filter Resources, Inc., Winchester, VA
ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)

SPX Flow Technology, Ocala, FL
Schenck Process, Kansas City, MO

Filter presses

Filtru-Systems Co., Farmington Hills, Michigan

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Filters, activated carbon

Argonide Corporation, Sanford, FL
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesheng.net; web site: www.dipesheng.com)

See our ad on page 61

Faudi GmbH, Stadtallendorf
Freudenberg Filtration Technologies SE & Co. KG, Weinheim

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Keystone Filter, a CECO Environmental Company, Telford, Pennsylvania

SPX Flow Technology, Ocala, FL
Sharplex Filters (I) Pvt. Ltd., Sales, NaviMumbai
TIGG Corporation, Oakdale, PA
United Manufacturing International 2000, Red Bluff, CA

Filters, air

Advanced Cyclone Systems, S. A., Porto
CECO Filters, a CECO Environmental Company, Telford,
Pennsylvania
Flex-Kleen, a CECO Environmental Company, Glendale
Heights, Illinois
Freudenberg Filtration Technologies SE & Co. KG, Wein-
heim
Hepa Corporation, Anaheim, CA
Keystone Filter, a CECO Environmental Company, Telford,
Pennsylvania
KIMRE, INC., 744 SW 1st Street, Homestead, Florida
33030 (305 233-4249; FAX: 305 233-8687; e-mail:
sales@kimre.com; web site: www.kimre.com)
LA-MAN Corp., Mazerpe, MN
Lectrodryer, Richmond, KY
Meissner Filtration Products, Camarillo, California
Pneumatech, Inc., Rock Hill, SC
SPX Flow Technology, Ocala, FL
Staplex Co., Air Sampler Div., Brooklyn, NY
ts-systemfilter gmbh, Ahorn-Berolzeim

Filters, bag

AIRLANCO, Falls City, NE
Filtira-Systems Co., Farmington Hills, Michigan
Filtration & Membrane Technology, Inc., Houston, TX
Flex-Kleen, a CECO Environmental Company, Glendale
Heights, Illinois
Freudenberg Filtration Technologies SE & Co. KG, Wein-
heim
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER
PUMPS, One Hayward Industrial Drive, Clemmons,
North Carolina 27012 (888-429-4635 USA/Canada;
888-429-4635; FAX: 888-778-8410; e-mail: jbau-
mann@hayward.com; web site: www.haywardflow-
control.com)
Hilliard Corp., Elmira, NY
Keystone Filter, a CECO Environmental Company, Telford,
Pennsylvania
Midwesco Filter Resources, Inc., Winchester, VA
Sharpex Filters (I) Pvt. Ltd., Sales, NaviMumbai

Filters, belt

BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
Faudi GmbH, Stadtallendorf
Freudenberg Filtration Technologies SE & Co. KG, Wein-
heim
G Bopp USA Inc., Wappingers Falls, NY
KOMLINE-SANDERSON ENGINEERING CORP., 12 Hol-
land Ave., Peapack, New Jersey 07977 (800-225-5457
North American; 908-234-1000; FAX: 908-234-9487;
e-mail: info@komline.com; web site: www.komline.
com)

See our ad on page 137

Outotec (USA), Inc., Jussup, Maryland

Filters, cartridge

AIRLANCO, Falls City, NE
Applied Porous Technologies, Inc., Tariffville, CT
Argonide Corporation, Sanford, FL
Faudi GmbH, Stadtallendorf
Filtira-Systems Co., Farmington Hills, Michigan
Filtration & Membrane Technology, Inc., Houston, TX
Flex-Kleen, a CECO Environmental Company, Glendale
Heights, Illinois
Freudenberg Filtration Technologies SE & Co. KG, Wein-
heim
G Bopp USA Inc., Wappingers Falls, NY
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER
PUMPS, One Hayward Industrial Drive, Clemmons,
North Carolina 27012 (888-429-4635 USA/Canada;
888-429-4635; FAX: 888-778-8410; e-mail: jbau-
mann@hayward.com; web site: www.haywardflow-
control.com)
Hilliard Corp., Elmira, NY
Keystone Filter, a CECO Environmental Company, Telford,
Pennsylvania
Liquid Process Systems, Inc., Indian Trail, North Carolina
Meflag, a CECO Environmental Company, Owosso,
Michigan
Meissner Filtration Products, Camarillo, California
Mott Corporation, 84 Spring Lane, Farmington, CT
06032-3159 (800-289-6688; 860-747-6333; FAX: 860-
747-6739; e-mail: quest@mottcorp.com; web site:
www.mottcorp.com)
MULTITHERM LLC, 11 General Warren Blvd., Malvern,
Pennsylvania 19355 (800-225-7440; 610-408-8361;
FAX: 610-408-8365; e-mail: techinfo@multitherm.
com; web site: www.multitherm.com)

Porvair Filtration Group Inc, Ashland, VA
SPX Flow Technology, Ocala, FL
Sharpex Filters (I) Pvt. Ltd., Sales, NaviMumbai
Steri Technologies Inc., Bohemia, NY
United Filtration Systems, Inc, Sterling Heights, MI
ts-systemfilter gmbh, Ahorn-Berolzeim

Filters, centrifugal

G Bopp USA Inc., Wappingers Falls, NY

KINESPIN, Division of Kinefac Corporation, Worcester,
Massachusetts
KIRK Process Solutions Ltd, Walton-on-Thames
Sharpex Filters (I) Pvt. Ltd., Sales, NaviMumbai
Tema Systems, Inc., Cincinnati, OH
Western States Machine Co., Hamilton, OH

Filters, clarifying

Ameridia, Div. of Eurodia Industries, Somerset, NJ
BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
KOMLINE-SANDERSON ENGINEERING CORP., 12 Hol-
land Ave., Peapack, New Jersey 07977 (800-225-5457
North American; 908-234-1000; FAX: 908-234-9487;
e-mail: info@komline.com; web site: www.komline.
com)

See our ad on page 137

Meissner Filtration Products, Camarillo, California

Filters, crossflow

ANDRITZ KMPT GmbH, Vierkirchen,
Ameridia, Div. of Eurodia Industries, Somerset, NJ
Applied Porous Technologies, Inc., Tariffville, CT
G Bopp USA Inc., Wappingers Falls, NY
HydroTec Systems Co., Inc., Tiskilwa, IL
KIMRE, INC., 744 SW 1st Street, Homestead, Florida
33030 (305 233-4249; FAX: 305 233-8687; e-mail:
sales@kimre.com; web site: www.kimre.com)
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden,
D-65203 (+49) (0)611-962-6001; FAX: +49 (0)611-962-
9237; e-mail: info@microdyn-nadir.de; web site:
www.microdyn-nadir.de)
Membrana, Charlotte, NC
Microdyn Technologies, Inc., Raleigh, North Carolina
Mott Corporation, 84 Spring Lane, Farmington, CT
06032-3159 (800-289-6688; 860-747-6333; FAX: 860-
747-6739; e-mail: quest@mottcorp.com; web site:
www.mottcorp.com)
Porvair Filtration Group Inc, Ashland, VA

Filters, disc, pressure

G Bopp USA Inc., Wappingers Falls, NY
Meflag, a CECO Environmental Company, Owosso,
Michigan
Westech Engineering Inc., Salt Lake City, UT

Filters, disc, vacuum

ANDRITZ KMPT GmbH, Vierkirchen,
Outotec (USA), Inc., Jussup, Maryland
Westech Engineering Inc., Salt Lake City, UT

Filters, drum, rotary pressure continuous

ANDRITZ KMPT GmbH, Vierkirchen,
BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
CTP Corp., Northport, NY

Filters, drum, rotary vacuum continuous

ANDRITZ KMPT GmbH, Vierkirchen,
KOMLINE-SANDERSON ENGINEERING CORP., 12 Hol-
land Ave., Peapack, New Jersey 07977 (800-225-5457
North American; 908-234-1000; FAX: 908-234-9487;
e-mail: info@komline.com; web site: www.komline.
com)

See our ad on page 137

Sharpex Filters (I) Pvt. Ltd., Sales, NaviMumbai

Filters, gas

CECO Filters, a CECO Environmental Company, Telford,
Pennsylvania
Faudi GmbH, Stadtallendorf
Freudenberg Filtration Technologies SE & Co. KG, Wein-
heim
G Bopp USA Inc., Wappingers Falls, NY
KIMRE, INC., 744 SW 1st Street, Homestead, Florida
33030 (305 233-4249; FAX: 305 233-8687; e-mail:
sales@kimre.com; web site: www.kimre.com)
Lectrodryer, Richmond, KY
Mott Corporation, 84 Spring Lane, Farmington, CT
06032-3159 (800-289-6688; 860-747-6333; FAX: 860-
747-6739; e-mail: quest@mottcorp.com; web site:
www.mottcorp.com)
Porvair Filtration Group Inc, Ashland, VA
SPX Flow Technology, Ocala, FL
United Filtration Systems, Inc, Sterling Heights, MI

Filters, gravity, porous bed

Freudenberg Filtration Technologies SE & Co. KG, Wein-
heim

Filters, HEPA

Freudenberg Filtration Technologies SE & Co. KG, Wein-
heim

HEMCORPORATION, 711 South Powell Road, Inde-
pendence, Missouri 64056 (800-779-4362; 816-796-
2900; FAX: 816-796-3333; e-mail: info@hemccorp.
com; web site: www.HEMCCORP.com)

Hepa Corporation, Anaheim, CA
Keystone Filter, a CECO Environmental Company, Telford,
Pennsylvania
Porvair Filtration Group Inc, Ashland, VA
ts-systemfilter gmbh, Ahorn-Berolzeim

Filters, horizontal belt, vacuum

BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
KOMLINE-SANDERSON ENGINEERING CORP., 12 Hol-
land Ave., Peapack, New Jersey 07977 (800-225-5457
North American; 908-234-1000; FAX: 908-234-9487;
e-mail: info@komline.com; web site: www.komline.
com)

See our ad on page 137

Outotec (USA), Inc., Jussup, Maryland
Westech Engineering Inc., Salt Lake City, UT

Filters, jacketed

MM Industries Inc., Vorti-Siv, Salem, OH
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK
MATERIALS TECHNOLOGY DEUTSCHLAND GMBH,
Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-
5105-0; FAX: 49-711-5105-152; e-mail: info.spds@-
sandvik.com; web site: www.processsystems.
sandvik.com)

Filters, leaf, horizontal, pressure

BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
Sharpex Filters (I) Pvt. Ltd., Sales, NaviMumbai
Steri Technologies Inc., Bohemia, NY

Filters, leaf, vacuum

Sharpex Filters (I) Pvt. Ltd., Sales, NaviMumbai

Filters, leaf, vertical, pressure

Sharpex Filters (I) Pvt. Ltd., Sales, NaviMumbai

Filters, magnetic

Magnetic Products, Inc., Highland, MI

Filters, membrane

ANDRITZ KMPT GmbH, Vierkirchen,
Filtration & Membrane Technology, Inc., Houston, TX
GEA Engineering, P.C., Nanuet, NY
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlin-
gen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-
mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Hepa Corporation, Anaheim, CA
HydroTec Systems Co., Inc., Tiskilwa, IL
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden,
D-65203 (+49) (0)611-962-6001; FAX: +49 (0)611-962-
9237; e-mail: info@microdyn-nadir.de; web site:
www.microdyn-nadir.de)

Meissner Filtration Products, Camarillo, California
Microdyn Technologies, Inc., Raleigh, North Carolina
Midwesco Filter Resources, Inc., Winchester, VA
Porvair Filtration Group Inc, Ashland, VA
United Filtration Systems, Inc, Sterling Heights, MI

Filters, microfiltration

Ameridia, Div. of Eurodia Industries, Somerset, NJ
Argonide Corporation, Sanford, FL
Filtration & Membrane Technology, Inc., Houston, TX
G Bopp USA Inc., Wappingers Falls, NY
GEA Engineering, P.C., Nanuet, NY
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlin-
gen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-
mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Hepa Corporation, Anaheim, CA
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden,
D-65203 (+49) (0)611-962-6001; FAX: +49 (0)611-962-
9237; e-mail: info@microdyn-nadir.de; web site:
www.microdyn-nadir.de)

Meissner Filtration Products, Camarillo, California
Microdyn Technologies, Inc., Raleigh, North Carolina
Mott Corporation, 84 Spring Lane, Farmington, CT
06032-3159 (800-289-6688; 860-747-6333; FAX: 860-
747-6739; e-mail: quest@mottcorp.com; web site:
www.mottcorp.com)

ORIVAL WATER FILTERS, 213 S Van Brunt St., Engle-
wood, New Jersey 07631-9902 (800-567-9767; 201-
568-3311; FAX: 201-568-1916; e-mail: sales@orival.
com; web site: www.orival.com)

Porvair Filtration Group Inc, Ashland, VA
Steri Technologies Inc., Bohemia, NY
United Filtration Systems, Inc, Sterling Heights, MI

Filters, nanofiltration

Ameridia, Div. of Eurodia Industries, Somerset, NJ
Argonide Corporation, Sanford, FL
GEA Engineering, P.C., Nanuet, NY

PRODUCT DIRECTORY

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

Keystone Filter, a CECO Environmental Company, Telford, Pennsylvania

MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

Microdyn Technologies, Inc., Raleigh, North Carolina
beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Filters, nutsche

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
See our ad on page 61

G Bopp USA Inc., Wappingers Falls, NY
Heinkel Filtering Systems Inc., Swedesboro, New Jersey
PSL USA, Boise, ID

Pope Scientific, Inc., Saukville, Wisconsin
Powder Systems Ltd, Liverpool
Sharpex Filters (I) Pvt. Ltd., Sales, Navimumbai
Steri Technologies Inc., Bohemia, NY

Filters, oil removal

Filtera-Systems Co., Farmington Hills, Michigan
Filtration & Membrane Technology, Inc., Houston, TX
G Bopp USA Inc., Wappingers Falls, NY
Meflag, a CECO Environmental Company, Owosso, Michigan
SPX Flow Technology, Ocala, FL

Filters, other

BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
G Bopp USA Inc., Wappingers Falls, NY
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
LA-MAN Corp., Mazeppa, MN

Meflag, a CECO Environmental Company, Owosso, Michigan
Membrana, Charlotte, NC
SPX Flow Technology, Ocala, FL
Sahyadri Engineering Corporation

Filters, pan

Heinkel Filtering Systems Inc., Swedesboro, New Jersey

Filters, pipeline

Hilliard Corp., Elmira, NY
Lectrodryer, Richmond, KY
ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)
SPX Flow Technology, Ocala, FL

Filters, plate & frame

Denver Mineral Engineers, Inc., Littleton, CO
Hilliard Corp., Elmira, NY

Filters, polymer

Maag Pump Systems AG, Oberglatt / ZH,
Meissner Filtration Products, Camarillo, California

Filters, porous metal

Applied Porous Technologies, Inc., Tariffville, CT
JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-811-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)
Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

Porvair Filtration Group Inc, Ashland, VA
Steri Technologies Inc., Bohemia, NY

MicrodYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

Membrana, Charlotte, NC
Microdyn Technologies, Inc., Raleigh, North Carolina
SPX Flow Technology, Ocala, FL
Steri Technologies Inc., Bohemia, NY

Filters, portable
Hilliard Corp., Elmira, NY
MM Industries, Inc., Vorti-Siv, Salem, OH

Filters, precoat
BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
See our ad on page 137

Meflag, a CECO Environmental Company, Owosso, Michigan

Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

Sharpex Filters (I) Pvt. Ltd., Sales, Navimumbai
Steri Technologies Inc., Bohemia, NY

Filters, pressure

ANDRITZ KMPT GmbH, Vierkirchen,
BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
See our ad on page 61

Faudi GmbH, Stadtallendorf
Heinkel Filtering Systems Inc., Swedesboro, New Jersey
Hilliard Corp., Elmira, NY

HydroTec Systems Co., Inc., Tiskilwa, IL
MM Industries, Inc., Vorti-Siv, Salem, OH
Ottect (USA), Inc., Jussup, Maryland
PSL USA, Boise, ID

Powder Systems Ltd, Liverpool
Steri Technologies Inc., Bohemia, NY
United Filtration Systems, Inc., Sterling Heights, MI

Filters, refrigerated

LA-MAN Corp., Mazeppa, MN

Filters, sand

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
See our ad on page 61

G Bopp USA Inc., Wappingers Falls, NY

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)

Pollution Control Systems, Inc., Millford, OH
United Manufacturing International 2000, Red Bluff, CA
Westech Engineering Inc., Salt Lake City, UT

Filters, self-cleaning

BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
Faudi GmbH, Stadtallendorf

MM Industries, Inc., Vorti-Siv, Salem, OH
ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)

Porvair Filtration Group Inc, Ashland, VA
Sharpex Filters (I) Pvt. Ltd., Sales, Navimumbai
Spencer Strainer Systems, Jeffersonville, IN
Steri Technologies Inc., Bohemia, NY

Filters, tray

Ototec (USA), Inc., Jussup, Maryland

Filters, tubular

Applied Porous Technologies, Inc., Tariffville, CT
Faudi GmbH, Stadtallendorf

Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

Filters, ultrafiltration

Ameridia, Div. of Eurodia Industries, Somerset, NJ
Argonide Corporation, Sanford, FL
G Bopp USA Inc., Wappingers Falls, NY
GEA Engineering, P.C., Nanuet, NY
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

Membrana, Charlotte, NC
Microdyn Technologies, Inc., Raleigh, North Carolina
SPX Flow Technology, Ocala, FL
Steri Technologies Inc., Bohemia, NY

Filters, vibrating

MM Industries, Inc., Vorti-Siv, Salem, OH

Filters, water

Argonide Corporation, Sanford, FL
Entex Technologies Inc, Chapel Hill, NC
Evocqua, Alpharetta, Georgia

Processing equipment

Faudi GmbH, Stadtallendorf
Filtera-Systems Co., Farmington Hills, Michigan
Filtration & Membrane Technology, Inc., Houston, TX
Keystone Filter, a CECO Environmental Company, Telford, Pennsylvania

MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

Microdyn Technologies, Inc., Raleigh, North Carolina



ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)

Filter systems

Advanced Cyclone Systems, S. A., Porto
Argonide Corporation, Sanford, FL
BHS-Sonhofen GmbH, Sonhofen, Deutschland
BHS-Sonhofen Inc., Charlotte, NC
CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

CTP Corp., Northport, NY
Coperion GmbH, Weingarten, Wuertt.,
Filtera-Systems Co., Farmington Hills, Michigan
Freudenberg Filtration Technologies SE & Co. KG, Weinheim

HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflowcontrol.com)

Hepa Corporation, Anaheim, CA
Hilliard Corp., Elmira, NY
HydroTec Systems Co., Inc., Tiskilwa, IL
Keystone Filter, a CECO Environmental Company, Telford, Pennsylvania

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
See our ad on page 137

Liquid Process Systems, Inc., Indian Trail, North Carolina
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

MM Industries, Inc., Vorti-Siv, Salem, OH
Maag Pump Systems AG, Oberglatt / ZH,
Magnetic Products, Inc., Highland, MI
Meflag, a CECO Environmental Company, Owosso, Michigan
Meissner Filtration Products, Camarillo, California

Microdyn Technologies, Inc., Raleigh, North Carolina
Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: technif@multitherm.com; web site: www.multitherm.com)

ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)

Ototec (USA), Inc., Jussup, Maryland
Porvair Filtration Group Inc, Ashland, VA
SPX Flow Technology, Ocala, FL
Steri Technologies Inc., Bohemia, NY
ts-systemfilter gmbh, Ahorn-Berolzeim

Microfiltration equipment

Filtration & Membrane Technology, Inc., Houston, TX
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

Membrana, Charlotte, NC
Microdyn Technologies, Inc., Raleigh, North Carolina
Porvair Filtration Group Inc, Ashland, VA
beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Screw presses

Heyl & Patterson Inc., Renneburg Division, Pittsburg, Pennsylvania

Strainers

Armstrong International, Three Rivers, MI
 CPI Wirecloth & Screens Inc, Pearland, TX
HAYWARD FLOW CONTROL SYSTEMS, WEBSTER PUMPS, One Hayward Industrial Drive, Clemmons, North Carolina 27012 (888-429-4635 USA/Canada; 888-429-4635; FAX: 888-778-8410; e-mail: jbaumann@hayward.com; web site: www.haywardflow-control.com)

Hilliard Corp., Elmira, NY

JLS International, Inc., Charlotte, North Carolina
KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4775; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.strainers.com)

ORIVAL WATER FILTERS, 213 S Van Brunt St., Englewood, New Jersey 07631-9902 (800-567-9767; 201-568-3311; FAX: 201-568-1916; e-mail: sales@orival.com; web site: www.orival.com)

Spraying Systems Co., Wheaton, IL
 Steri Technologies Inc., Bohemia, NY

HEAT EXCHANGERS, CONDENSERS & COOLERS

Aftercoolers

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
 See our ad on page 61

Schutte & Koerting, Treviso, PA

Condensate return systems

Fulton Companies, The, Fulton Thermal Corporation, Pulaski, NY
 HRS Process Systems Ltd., Pune,
 M&C TechGroup, Ventura, CA
 Roth Pump, Rock Island, Illinois
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (900-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
 See our ad on page 98

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Condensers, air cooled

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
 See our ad on page 61

Hudson Products Corp., Houston, TX

PAHARPUR COOLING TOWERS LTD., Paharpur House, 8/1/B Diamond Harbour Road, Kolkata, 700027 (+913340133000; FAX: +913340133499; e-mail: pctccu@paharpur.com; web site: www.paharpur.com)
 See our ad on page 84

SPX Cooling Technologies, Overland Park, KS

Condensers, barometric

Advanced Industrial Technology Corp., Paramus, NJ
CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
 See our ad on page 105

Condensers, coil

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
 See our ad on page 61

Condensers, evaporative refrigerant

GEA Refrigeration North America, York, PA
 SPX Cooling Technologies, Overland Park, KS

Condensers, fractional

HRS Process Systems Ltd., Pune,

Condensers, jet ejector

CG Thermal LLC, Twinsburg, Ohio

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
 See our ad on page 89

HRS Process Systems Ltd., Pune,

JLS International, Inc., Charlotte, North Carolina
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
 See our ad on page 105

Schutte & Koerting, Treviso, PA

manning&lewis div rubicon industries corp, Brooklyn, New York

Condensers, plate

GEA PHE Systems, York, PA

Condensers, reflux

HRS Process Systems Ltd., Pune,
 Hudson Products Corp., Houston, TX
 manning&lewis div rubicon industries corp, Brooklyn, New York

Condensers, refrigerant

GEA Refrigeration North America, York, PA
 Hudson Products Corp., Houston, TX

Condensers, shell & tube

CG Thermal LLC, Twinsburg, Ohio

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
 See our ad on page 61

Enerquip, LLC, Medford, WI

GEA Refrigeration North America, York, PA

HRS Process Systems Ltd., Pune,
 JLS International, Inc., Charlotte, North Carolina
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
 See our ad on page 105

Schutte & Koerting, Treviso, PA

manning&lewis div rubicon industries corp, Brooklyn, New York

Condensers, steam

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

HRS Process Systems Ltd., Pune,

Hudson Products Corp., Houston, TX
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
 See our ad on page 105

Schutte & Koerting, Treviso, PA

Tranter Ltd., Wakefield
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

manning&lewis div rubicon industries corp, Brooklyn, New York

Condensers, surface

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqainc.com)

CU SERVICES LLC, Elk Grove, IL

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

JLS International, Inc., Charlotte, North Carolina

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
 See our ad on page 105

Schutte & Koerting, Treviso, PA

Condensers, tubular

HRS Process Systems Ltd., Pune,
 JLS International, Inc., Charlotte, North Carolina

Condensers, vapor

CG Thermal LLC, Twinsburg, Ohio

Enerquip, LLC, Medford, WI
 HRS Process Systems Ltd., Pune,
 Hudson Products Corp., Houston, TX

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
 See our ad on page 105

Coolers, air cooled

Bepex International LLC, Minneapolis, MN

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Hudson Products Corp., Houston, TX

Mokon, Buffalo, NY
 Pneumatech, Inc., Rock Hill, SC
 Tex-Fin, Inc., Houston, Texas

Coolers, belt

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)
BERNDORF BAND GMBH, Leobersdorferstr. 26, Berndorf, 2560 (43-2672-800-0; FAX: 43-2672-84176; e-mail: band@berndorf.at; web site: www.berndorf-band.at)
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Sallerstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spde@sandvik.com; web site: www.processsystems.sandvik.com)
SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.processsystems.sandvik.com)

Coolers, brine

HRS Process Systems Ltd., Pune,

Coolers, cascade

Thermotron, Holland, MI

Coolers, closed circuit

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)
 Bepex International LLC, Minneapolis, MN
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)
 HRS Process Systems Ltd., Pune,
 PolyScience, Niles, IL
 Tranter Ltd., Wakefield

Coolers, coil

Sentry Equipment Corp., 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Coolers, drum

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)
FEECO International, Inc., Green Bay, WI
 Heyl & Patterson Inc., Renneburg Division, Pittsburg, Pennsylvania

Coolers, evaporative

Advanced Industrial Technology Corp., Paramus, NJ
CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)
 Delta Cooling Towers Inc., Roxbury Township, NJ
 Luma Comfort, Orange, CA
 SPX Cooling Technologies, Overland Park, KS
 Spray Drying Systems, Inc., Eldersburg, MD
 Steri Technologies Inc., Bohemia, NY

Coolers, finned tube

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
 See our ad on page 61

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

Hudson Products Corp., Houston, TX
 Tex-Fin, Inc., Houston, Texas

Coolers, flash

Advanced Industrial Technology Corp., Paramus, NJ
 Bepex International LLC, Minneapolis, MN

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

Coolers, plate

GEA PHE Systems, York, PA
Steri Technologies Inc., Bohemia, NY

Coolers, rotary

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

FEEOC International, Inc., Green Bay, WI
Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

KOMLINE-SANDESON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Coolers, screw

ANDRITZ Gouda, Waddinxveen
Bepex International LLC, Minneapolis, MN

KOMLINE-SANDESON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Coolers, spray

Spray Drying Systems, Inc., Eldersburg, MD

Coolers, water

Dr. Thiedig GmbH & Co KG, Berlin
HRS Process Systems Ltd., Pune,
Hudson Products Corp., Houston, TX
Mokon, Buffalo, NY
Pneumatech, Inc., Rock Hill, SC
PolyScience, Niles, IL

Sentry Equipment Corp., 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Desuperheaters

CU SERVICES LLC, Elk Grove, IL



CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

JLS International, Inc., Charlotte, North Carolina
SAMSON Controls, Inc., Baytown, Texas
Schutte & Koerting, Trevoze, PA
Sulzer Chemtech USA, Inc., Tulsa, OK

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Economizers

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

HRS Process Systems Ltd., Pune,
INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)
Tex-Fin, Inc., Houston, Texas

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Heat exchanger parts & accessories

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

Fulton Companies, The, Fulton Thermal Corporation, Pulaski, NY

GEA PHE Systems, York, PA
HRS Process Systems Ltd., Pune,
Hudson Products Corp., Houston, TX

SAINIT-GOBAIN CERAMICS/STRUCTURAL CERAMICS, 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: sod.sales@sainit-gobain.com; web site: www.hexoloy.com)

See our ad on page 167

TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

Tranter Ltd., Wakefield

USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

W.L. Gore & Associates, Sealant Technologies, 201 Airport Road, P.O. Box 1488, Elkton, Maryland 21921 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Heat exchangers, PTFE tube

Sentry Equipment Corp., 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Heat exchangers, U tube

Bryan Steam LLC, Peru, IN

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Enerquip, LLC, Medford, WI

HRS Process Systems Ltd., Pune,
JLS International, Inc., Charlotte, North Carolina

MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: techinfo@multitherm.com; web site: www.multitherm.com)

PRAJ INDUSTRIES LIMITED, Praj Tower* 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057 (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

Spaltech International Inc., Halton Hills,

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

manning&lewis div rubicon industries corp, Brooklyn, New York

Heat exchangers, air cooled

Greenwood Engineering Inc., Excelsior, MN
Hudson Products Corp., Houston, TX
Midwest Steel Company Inc, Houston, Texas

Munters Corporation, Buena Vista, VA
PAHARPUR COOLING TOWERS LTD., Paharpur House, 8/1/B Diamond Harbour Road, Kolkata, 700027 (+913340133000; FAX: +913340133499; e-mail: ptcctu@paharpur.com; web site: www.paharpur.com)

See our ad on page 84

PolyScience, Niles, IL

SPX Cooling Technologies, Overland Park, KS
Spaltech International Inc., Halton Hills,
Tex-Fin, Inc., Houston, Texas

Heat exchangers, all-welded

GEA PHE Systems, York, PA
Greenwood Engineering Inc., Excelsior, MN
HRS Process Systems Ltd., Pune,
JLS International, Inc., Charlotte, North Carolina

Munters Corporation, Buena Vista, VA
Spaltech International Inc., Halton Hills,

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Tranter Ltd., Wakefield

Heat exchangers, bayonet

Enerquip, LLC, Medford, WI

HRS Process Systems Ltd., Pune,

Heat exchangers, cascade

GEA Refrigeration North America, York, PA
HRS Process Systems Ltd., Pune,

Heat exchangers, ceramic

CG Thermal LLC, Twinsburg, Ohio
CTP Corp., Northport, NY
Procedyn Corp., New Brunswick, NJ

Heat exchangers, coil

Armstrong International, Three Rivers, MI
Greenwood Engineering Inc., Excelsior, MN
Linde AG, Engineering Division, Pullach

MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: techinfo@multitherm.com; web site: www.multitherm.com)

Sentry Equipment Corp., 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Heat exchangers, direct contact steam

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

Hydro-Thermal Corp., Waukesha, WI

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Pick Heaters Inc., West Bend, WI

ProSonic LLC, Milwaukee, WI
Spaltech International Inc., Halton Hills,
Sulzer Chemtech USA, Inc., Tulsa, OK

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Heat exchangers, double pipe

BORSIG GmbH, Berlin

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

HRS Process Systems Ltd., Pune,
JLS International, Inc., Charlotte, North Carolina
Team Industries, Inc., Kaukauna, WI

Heat exchangers, falling film

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

HRS Process Systems Ltd., Pune,
manning&lewis div rubicon industries corp, Brooklyn, New York

Heat exchangers, finned tube

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

Greenwood Engineering Inc., Excelsior, MN
Hudson Products Corp., Houston, TX
Munters Corporation, Buena Vista, VA

Heat exchangers, glass

CG Thermal LLC, Twinsburg, Ohio
De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)

Heat exchangers, graphite

CG Thermal LLC, Twinsburg, Ohio
Nantong Fareast Chemical Equipment Co. LTD, International Trading, Nantong

Heat exchangers, jacketed pipe

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
See our ad on page 61

Dueker GmbH & Co. KGaA, Laufach
HRS Process Systems Ltd., Pune,

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Heat exchangers, plate

GEA PHE Systems, York, PA
GEA Refrigeration North America, York, PA
INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

Munters Corporation, Buena Vista, VA
Tranter Ltd., Wakefield
United Performance Metals, Houston, TX

Heat exchangers, plate coil

Tranter Ltd., Wakefield

Heat exchangers, plate fin

Armstrong International, Three Rivers, MI
Greenwood Engineering Inc., Excelsior, MN
Linde AG, Engineering Division, Pullach

Heat exchangers, scraped surface

BORSIG GmbH, Berlin
Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

HRS Process Systems Ltd., Pune,
Sahyadri Engineering Corporation
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Sailerstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

Heat exchangers, screw flight

Bepex International LLC, Minneapolis, MN
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
See our ad on page 137

Metso Minerals Industries, Inc., York, PA

Heat exchangers, shell & tube

Aaron Process Equipment Co., Bensenville, IL
Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD
ALAQUA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alaquamindspring.com; web site: www.alaquainc.com)

Anguil Environmental Systems, Inc., Milwaukee, WI
CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Coperion GmbH, Weingarten, Wuert.,
CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)



DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
See our ad on page 61

Enerquip, LLC, Medford, WI
Epon Industrial Systems, LP, The Woodlands, TX
GEA Refrigeration North America, York, PA

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

HRS Process Systems Ltd., Pune,
JLS International, Inc., Charlotte, North Carolina
MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: technifo@multitherm.com; web site: www.multitherm.com)

Munters Corporation, Buena Vista, VA
Nantong Fareast Chemical Equipment Co. LTD, International Trading, Nantong

PRAJ INDUSTRIES LIMITED, Praj Tower# 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

RAS Process Equipment Inc., Robbinsville, NJ
Samuel Pressure Vessel Group, Marinette, WI
Spaltech International Inc., Halton Hills,
Sulzer Chemtech USA, Inc., Tulsa, OK

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

manning & Lewis, New York
manning&lewis div rubicon industries corp, Brooklyn, New York

Heat exchangers, spiral

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
See our ad on page 61

Dr. Thiedig GmbH & Co KG, Berlin
FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

HRS Process Systems Ltd., Pune,
ProSonic LLC, Milwaukee, WI
Sentry Equipment Corp, 966 Blue Ribbon Circle North, Oconomowoc, WI 53066 (262-567-7256; FAX: 262-567-4523; e-mail: sales@sentry-equip.com; web site: www.sentry-equip.com)

Tranter Ltd., Wakefield

Heat exchangers, tantalum

CG Thermal LLC, Twinsburg, Ohio
TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Heat exchangers, titanium

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
See our ad on page 61

GEA PHE Systems, York, PA
HRS Process Systems Ltd., Pune,
JLS International, Inc., Charlotte, North Carolina
PRAJ INDUSTRIES LIMITED, Praj Tower# 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Tranter Ltd., Wakefield

Heat exchangers, zirconium

JLS International, Inc., Charlotte, North Carolina
TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Heat transfer systems

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD
Fulton Companies, The, Fulton Thermal Corporation, Pulaski, NY
HRS Process Systems Ltd., Pune,
HTT Energy GmbH, Herford
Hudson Products Corp., Houston, TX

LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Mokon, Buffalo, NY
Munters Corporation, Buena Vista, VA
ProSonic LLC, Milwaukee, WI
Solutia Inc., A subsidiary of Eastman Chemical Co., St. Louis, MO

Spaltech International Inc., Halton Hills,
UNIFLUX / EXOTHERM CORP, 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

Heaters, Water

Pick Heaters Inc., West Bend, WI

Heaters, microwave

Cober, Inc., Stratford, CT

Heaters, process liquid

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD
Dalton Electric Heating Co., Inc., Ipswich, MA
HRS Process Systems Ltd., Pune,
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-233; e-mail: st@koerting.de; web site: www.koerting.de)
See our ad on page 105

Pick Heaters Inc., West Bend, WI
ProSonic LLC, Milwaukee, WI
UNIFLUX / EXOTHERM CORP, 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

manning&lewis div rubicon industries corp, Brooklyn, New York

Heaters, process slurry

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD
HRS Process Systems Ltd., Pune,
Hydro-Thermal Corp., Waukesha, WI
Pick Heaters Inc., West Bend, WI
ProSonic LLC, Milwaukee, WI
UNIFLUX / EXOTHERM CORP, 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

Inserts, heat-exchanger tube

CTI Industries Inc., Carlsbad, CA
Tex-Fin, Inc., Houston, Texas

Preheaters

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD
Enerquip, LLC, Medford, WI
HRS Process Systems Ltd., Pune,
Hudson Products Corp., Houston, TX
JLS International, Inc., Charlotte, North Carolina
Process Combustion Corp., Pittsburgh, PA
UNIFLUX / EXOTHERM CORP, 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

manning&lewis div rubicon industries corp, Brooklyn, New York

Reboilers

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)
See our ad on page 61

Enerquip, LLC, Medford, WI
HRS Process Systems Ltd., Pune,
Tex-Fin, Inc., Houston, Texas
UNIFLUX / EXOTHERM CORP, 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

manning&lewis div rubicon industries corp, Brooklyn, New York

Superheaters

HRS Process Systems Ltd., Pune,
JLS International, Inc., Charlotte, North Carolina
PRAJ INDUSTRIES LIMITED, Praj Tower# 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)
RAS Process Equipment Inc., Robbinsville, NJ
UNIFLUX / EXOTHERM CORP, 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Troughs, cooled or heated

ANDRITZ Gouda, Waddingveen
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
See our ad on page 137

Team Industries, Inc., Kaukauna, WI

Waste heat recovery units

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD
BORSIG GmbH, Berlin
HRS Process Systems Ltd., Pune,
HTT Energy GmbH, Herford
Hudson Products Corp., Houston, TX

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)
Munters Corporation, Buena Vista, VA
RAS Process Equipment Inc., Robbinsville, NJ
Turner EnviroLogic, Inc., Deerfield Beach, FL

HEAT TRANSFER MEDIA

Heat transfer fluids, cooling fluids

EASTMAN CHEMICAL COMPANY - THERMINOL HEAT TRANSFER FLUIDS, 575 Maryville Centre Drive, Saint Louis, Missouri 63141 (800-433-6997; e-mail: team.therminol@eastman.com; web site: www.therminol.com)
LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Liquid Process Systems, inc., Indian Trail, North Carolina
PARATHERM CORP., 31 Portland Rd, Conshohocken, Pennsylvania 19428 (800-222-3611 (US, CAN, Caribbean); 610-941-4900; FAX: 610-941-9191; e-mail: info@paratherm.com; web site: www.paratherm.com)

Petron Plus Global, Inc., Hutchinson, Kansas
Solutia Inc., A subsidiary of Eastman Chemical Co., St. Louis, MO

Heat transfer fluids, heating fluids

EASTMAN CHEMICAL COMPANY - THERMINOL HEAT TRANSFER FLUIDS, 575 Maryville Centre Drive, Saint Louis, Missouri 63141 (800-433-6997; e-mail: team.therminol@eastman.com; web site: www.therminol.com)
LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Liquid Process Systems, inc., Indian Trail, North Carolina
MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: techinfo@multitherm.com; web site: www.multitherm.com)

PARATHERM CORP., 31 Portland Rd, Conshohocken, Pennsylvania 19428 (800-222-3611 (US, CAN, Caribbean); 610-941-4900; FAX: 610-941-9191; e-mail: info@paratherm.com; web site: www.paratherm.com)

Petron Plus Global, Inc., Hutchinson, Kansas
Solutia Inc., A subsidiary of Eastman Chemical Co., St. Louis, MO

Heat transfer fluids, other

EASTMAN CHEMICAL COMPANY - THERMINOL HEAT TRANSFER FLUIDS, 575 Maryville Centre Drive, Saint Louis, Missouri 63141 (800-433-6997; e-mail: team.therminol@eastman.com; web site: www.therminol.com)
LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Momentive Performance Materials Inc., Waterford, New York
MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: techinfo@multitherm.com; web site: www.multitherm.com)

PARATHERM CORP., 31 Portland Rd, Conshohocken, Pennsylvania 19428 (800-222-3611 (US, CAN, Caribbean); 610-941-4900; FAX: 610-941-9191; e-mail: info@paratherm.com; web site: www.paratherm.com)

Petron Plus Global, Inc., Hutchinson, Kansas
Solutia Inc., A subsidiary of Eastman Chemical Co., St. Louis, MO

Hot oils

EASTMAN CHEMICAL COMPANY - THERMINOL HEAT TRANSFER FLUIDS, 575 Maryville Centre Drive, Saint Louis, Missouri 63141 (800-433-6997; e-mail: team.therminol@eastman.com; web site: www.therminol.com)

Liquid Process Systems, inc., Indian Trail, North Carolina
MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: techinfo@multitherm.com; web site: www.multitherm.com)

PARATHERM CORP., 31 Portland Rd, Conshohocken, Pennsylvania 19428 (800-222-3611 (US, CAN, Caribbean); 610-941-4900; FAX: 610-941-9191; e-mail: info@paratherm.com; web site: www.paratherm.com)

Solutia Inc., A subsidiary of Eastman Chemical Co., St. Louis, MO

Thermal fluids

EASTMAN CHEMICAL COMPANY - THERMINOL HEAT TRANSFER FLUIDS, 575 Maryville Centre Drive, Saint Louis, Missouri 63141 (800-433-6997; e-mail: team.therminol@eastman.com; web site: www.therminol.com)
LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)

Liquid Process Systems, inc., Indian Trail, North Carolina
MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: techinfo@multitherm.com; web site: www.multitherm.com)

PARATHERM CORP., 31 Portland Rd, Conshohocken, Pennsylvania 19428 (800-222-3611 (US, CAN, Caribbean); 610-941-4900; FAX: 610-941-9191; e-mail: info@paratherm.com; web site: www.paratherm.com)
Solutia Inc., A subsidiary of Eastman Chemical Co., St. Louis, MO

HEATING & COOLING EQUIPMENT, OTHER

Air preheat systems

Hudson Products Corp., Houston, TX
Munters Corporation, Buena Vista, VA
Process Combustion Corp., Pittsburgh, PA
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)
ZEECO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

Baths, constant temperature

LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)
PolyScience, Niles, IL

Chillers, recirculating

BARTEC GmbH, Bad Mergentheim
LAUDA DR. R. WOBSEER GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)
PolyScience, Niles, IL
Thermonics Corp, Mansfields, MA

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Coils

Armstrong International, Three Rivers, MI
FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)

JLS International, Inc., Charlotte, North Carolina
MULTITHERM LLC, 11 General Warren Blvd., Malvern, Pennsylvania 19355 (800-225-7440; 610-408-8361; FAX: 610-408-8365; e-mail: techinfo@multitherm.com; web site: www.multitherm.com)

Gaskets, plate heat exchanger

GEA PHE Systems, York, PA
Tranter Ltd., Wakefield
United Performance Metals, Houston, TX

Generators, steam

Advanced Heat Recovery, Inc., Division of AQUA Innovations, Inc., Baltimore, MD

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

Heaters, air & gas

Kloepffer-Therm GmbH & Co. KG, Dortmund
Leister Technologies AG, Kaegiswil
Process Combustion Corp., Pittsburgh, PA
Sigma Thermal Inc., Marietta, Georgia
Tempco Electric Heater Co., Illinois
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)

See our ad on page 62

Watlow, St. Louis, MO

ZEECO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

Heaters, bayonet

Dalton Electric Heating Co., Inc., Ipswich, MA
Tex-Fin, Inc., Houston, Texas

Heaters, cartridge

Dalton Electric Heating Co., Inc., Ipswich, MA
Tempco Electric Heater Co., Illinois
Watlow, St. Louis, MO

Heaters, convection

Sigma Thermal Inc., Marietta, Georgia
Tempco Electric Heater Co., Illinois

Heaters, direct fired

HTT Energy GmbH, Herford
Hudson Products Corp., Houston, TX
Process Combustion Corp., Pittsburgh, PA
Sigma Thermal Inc., Marietta, Georgia
Tex-Fin, Inc., Houston, Texas
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

Heaters, drum

LEWCO, Inc., Sandusky, OH

Heaters, feedwater

HRS Process Systems Ltd., Pune, ProSonic LLC, Milwaukee, WI
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Heaters, finned tube

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)
Hudson Products Corp., Houston, TX
Sigma Thermal Inc., Marietta, Georgia
Tex-Fin, Inc., Houston, Texas
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

Heaters, gas fired

Fulton Companies, The, Fulton Thermal Corporation, Pulaski, NY
HTT Energy GmbH, Herford
Munters Corporation, Buena Vista, VA
Process Combustion Corp., Pittsburgh, PA
Sigma Thermal Inc., Marietta, Georgia
Tex-Fin, Inc., Houston, Texas

UNIFLUX®
Quality Heaters Since 1957



Hot Oil•Regeneration Gas•Crude Oil,
Air•Steam•Process•Offshore Heaters

Exotherm Corporation
www.exotherm.com

UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)
See our ad on page 62

Heaters, helical coil

FIN TUBE PRODUCTS, INC., 188 S Lyman St., Suite 100, Wadsworth, Ohio 44281 (800-334-3736; 330-334-3736; FAX: 330-334-3848; e-mail: mb@fintube.com; web site: www.fintube.com)
Fulton Companies, The, Fulton Thermal Corporation, Pulaski, NY

HRS Process Systems Ltd., Pune,
Sigma Thermal Inc., Marietta, Georgia
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

Heaters, immersion

Dalton Electric Heating Co., Inc., Ipswich, MA
LAUDA DR. R. WOBSEY GMBH & CO. KG, Pfarrstrasse
41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-
0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail:
info@lauda.de; web site: www.lauda.de)

PolyScience, Niles, IL
Sigma Thermal Inc., Marietta, Georgia
Tempco Electric Heater Co., Illinois

Heaters, indirect fired (waterbath)

HRS Process Systems Ltd., Pune,
Sigma Thermal Inc., Marietta, Georgia
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

Heaters, induction

Dalton Electric Heating Co., Inc., Ipswich, MA
PRyüFTECHNIK Dieter Busch AG, Ismaning,

Heaters, infrared

Tempco Electric Heater Co., Illinois

Heaters, instantaneous

Pick Heaters Inc., West Bend, WI
Schutte & Koerting, Treviso, PA
Tempco Electric Heater Co., Illinois
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

Heaters, jacketed

Dalton Electric Heating Co., Inc., Ipswich, MA
HRS Process Systems Ltd., Pune,
Hydro-Thermal Corp., Waukesha, WI
Pick Heaters Inc., West Bend, WI
Schutte & Koerting, Treviso, PA

Heaters, molten salt

Sigma Thermal Inc., Marietta, Georgia
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

Heaters, pipeline

Schutte & Koerting, Treviso, PA
Sigma Thermal Inc., Marietta, Georgia
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

Heaters, plate

Dalton Electric Heating Co., Inc., Ipswich, MA
GEA PHE Systems, York, PA

Heaters, portable

Tempco Electric Heater Co., Illinois
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

Heaters, sandwich type

Kloepfer-Therm GmbH & Co. KG, Dortmund

Heaters, screw flight

KOMLINE-SANDERSON ENGINEERING CORP., 12 Hol-
land Ave., Peapack, New Jersey 07977 (800-225-5457
North American; 908-234-1000; FAX: 908-234-9487;
e-mail: info@komline.com; web site: www.komline.
com)
See our ad on page 137

Heaters, spiral

HRS Process Systems Ltd., Pune,

Heaters, steam injection

Elmridge Inc., Livonia, Michigan

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlin-
gen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-
mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

Hydro-Thermal Corp., Waukesha, WI
KOERTING HANNOVER AG, Badenstedter Str. 56, Han-
nover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-
mail: st@koerting.de; web site: www.koerting.de)
See our ad on page 105

Pick Heaters Inc., West Bend, WI
ProSinox LLC, Milwaukee, WI
Schutte & Koerting, Treviso, PA

WABASH POWER EQUIPMENT CO., 444 Carpenter
Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-
704-2002; 847-541-5600; FAX: 847-541-1279; e-mail:
info@wabashpower.com; web site: www.wabash-
power.com)

Heaters, tank car

Armstrong International, Three Rivers, MI
Hydro-Thermal Corp., Waukesha, WI
Pick Heaters Inc., West Bend, WI

Heaters, thermal liquid

Fulton Companies, The, Fulton Thermal Corporation, Pu-
laski, NY
HRS Process Systems Ltd., Pune,
HTT Energy GmbH, Herford
Mokon, Buffalo, NY
Spaltech International Inc., Halton Hills,
Tempco Electric Heater Co., Illinois

UNIFLUX®

Quality Heaters Since 1957



Hot Oil•Regeneration Gas•Crude Oil,
Air•Steam•Process•Offshore Heaters

Exotherm Corporation
www.exotherm.com

UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

Heaters, tubular

Dalton Electric Heating Co., Inc., Ipswich, MA
HRS Process Systems Ltd., Pune,
Tempco Electric Heater Co., Illinois
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

WABASH POWER EQUIPMENT CO., 444 Carpenter
Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-
704-2002; 847-541-5600; FAX: 847-541-1279; e-mail:
info@wabashpower.com; web site: www.wabash-
power.com)
Watlow, St. Louis, MO

Heaters, unit

Armstrong International, Three Rivers, MI
Dalton Electric Heating Co., Inc., Ipswich, MA
HTT Energy GmbH, Herford

Recuperators

Advanced Heat Recovery, Inc., Division of AQUA Innova-
tions, Inc., Baltimore, MD
HRS Process Systems Ltd., Pune,

Sterilizers

AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching,
82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail:
info@ava-huep.com; web site: www.ava-huep.com)
HRS Process Systems Ltd., Pune,

Tracing, pipe

Spaltech International Inc., Halton Hills,

Vaporizers

UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

KILNS, OVENS & FURNACES

Burners, coal

WABASH POWER EQUIPMENT CO., 444 Carpenter
Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-
704-2002; 847-541-5600; FAX: 847-541-1279; e-mail:
info@wabashpower.com; web site: www.wabash-
power.com)

Burners, combination fuel

Process Combustion Corp., Pittsburgh, PA
WABASH POWER EQUIPMENT CO., 444 Carpenter
Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-
704-2002; 847-541-5600; FAX: 847-541-1279; e-mail:
info@wabashpower.com; web site: www.wabash-
power.com)

ZEECO, INC., 22151 E. 91st St., Broken Arrow, Okla-
homa 74014 (918-258-8551; FAX: 918-251-5519; e-
mail: sales@zeeco.com; web site: www.zeeco.com)

Burners, gas

John Zink Hamworthy Combustion, 11920 East
Apache Street, Tulsa, OK 74116 (918.234.2800; FAX:
918.234.1800; e-mail: info@johnzink.com; web site:
www.johnzinkhamworthy.com)

Process Combustion Corp., Pittsburgh, PA
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive,
Houston, Texas 77042 (713-981-9100; FAX: 713-981-
7081; e-mail: info@exotherm.com; web site: www.
exotherm.com)
See our ad on page 62

WABASH POWER EQUIPMENT CO., 444 Carpenter
Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-
704-2002; 847-541-5600; FAX: 847-541-1279; e-mail:
info@wabashpower.com; web site: www.wabash-
power.com)

ZEECO, INC., 22151 E. 91st St., Broken Arrow, Okla-
homa 74014 (918-258-8551; FAX: 918-251-5519; e-
mail: sales@zeeco.com; web site: www.zeeco.com)

Burners, oil

John Zink Hamworthy Combustion, 11920 East
Apache Street, Tulsa, OK 74116 (918.234.2800; FAX:
918.234.1800; e-mail: info@johnzink.com; web site:
www.johnzinkhamworthy.com)

Process Combustion Corp., Pittsburgh, PA
WABASH POWER EQUIPMENT CO., 444 Carpenter
Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-
704-2002; 847-541-5600; FAX: 847-541-1279; e-mail:
info@wabashpower.com; web site: www.wabash-
power.com)

ZEECO, INC., 22151 E. 91st St., Broken Arrow, Okla-
homa 74014 (918-258-8551; FAX: 918-251-5519; e-
mail: sales@zeeco.com; web site: www.zeeco.com)

Calciners, fluidizing

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg,
67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04;
e-mail: comessa@comessa.fr; web site: www.
comessa.com)

CPFD-Software, Albuquerque, New Mexico
Heyl & Patterson Inc., Renneburg Division, Pittsburgh,
Pennsylvania
Procedyne Corp., New Brunswick, NJ

Calciners, rotary

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg,
67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04;
e-mail: comessa@comessa.fr; web site: www.
comessa.com)

Denver Mineral Engineers, Inc., Littleton, CO
FEECO International, Inc., Green Bay, WI
Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
Heyl & Patterson Inc., Renneburg Division, Pittsburgh,
Pennsylvania

Furnaces, annealing

Epcon Industrial Systems, LP, The Woodlands, TX
Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
Lucifer Furnaces Inc., Warrington, PA
Procedyne Corp., New Brunswick, NJ

Furnaces, cracking

Diamond Refractory Services, Texas

Furnaces, electric

Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
LEWCO, Inc., Sandusky, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
Lucifer Furnaces Inc., Warrington, PA
Procedyne Corp., New Brunswick, NJ

Furnaces, fluid bed

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Procedyne Corp., New Brunswick, NJ

Furnaces, gas burning

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Epcon Industrial Systems, LP, The Woodlands, TX
Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)

See our ad on page 62

Furnaces, hearth

Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
Lucifer Furnaces Inc., Warrington, PA
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Furnaces, high pressure

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)

See our ad on page 62

Furnaces, high temperature

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Epcon Industrial Systems, LP, The Woodlands, TX
Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
Lucifer Furnaces Inc., Warrington, PA
Procedyne Corp., New Brunswick, NJ
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)

See our ad on page 62

ZIRCAR Refractory Composites, Inc., Florida, NY

Furnaces, induction

L&L Special Furnace Co., Inc., Aston, Pennsylvania
ZIRCAR Refractory Composites, Inc., Florida, NY

Furnaces, melting

Denver Mineral Engineers, Inc., Littleton, CO
Harrop Industries, Inc., Columbus, OH

Furnaces, muffle

Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
Lucifer Furnaces Inc., Warrington, PA

Furnaces, multiple hearth

Harper International, Buffalo, New York
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Furnaces, radiant heating

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH

Furnaces, rotary hearth

Harrop Industries, Inc., Columbus, OH

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Furnaces, vacuum

LEWCO, Inc., Sandusky, OH
ZIRCAR Refractory Composites, Inc., Florida, NY

Furnaces, vertical

Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
Lucifer Furnaces Inc., Warrington, PA
UNIFLUX / EXOTHERM CORP., 888 Wilcrest Drive, Houston, Texas 77042 (713-981-9100; FAX: 713-981-7081; e-mail: info@exotherm.com; web site: www.exotherm.com)

See our ad on page 62

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Kiln, oven & furnace accessories

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
Lucifer Furnaces Inc., Warrington, PA

Kilns, fluidizing

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CPFD-Software, Albuquerque, New Mexico
Procedyne Corp., New Brunswick, NJ

Kilns, rotary

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

FEECO International, Inc., Green Bay, WI
Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania
Metso Minerals Industries, Inc., York, PA

Kilns, vertical transfer

Harper International, Buffalo, New York
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Ovens, drying

AWT World Trade Inc., Chicago, IL
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Cober, Inc., Stratford, CT
Epcon Industrial Systems, LP, The Woodlands, TX
Harper International, Buffalo, New York
Harrop Industries, Inc., Columbus, OH
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Ovens, electric

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Epcon Industrial Systems, LP, The Woodlands, TX
Harrop Industries, Inc., Columbus, OH
LEWCO, Inc., Sandusky, OH
L&L Special Furnace Co., Inc., Aston, Pennsylvania
Lucifer Furnaces Inc., Warrington, PA

Ovens, infrared

AWT World Trade Inc., Chicago, IL
COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Ovens, microwave

Cober, Inc., Stratford, CT

Ovens, radiant heating

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Ovens, vacuum

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Roasters, food products

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457; North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

Sweet Manufacturing Company, Springfield, OH
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

MIXING EQUIPMENT FOR FLUIDS

Homogenizers

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

Bepex International LLC, Minneapolis, MN
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: + 49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

IKA-Werke GmbH & Co.KG, Staufen
Microfluidics, Newton, MA
Wilhelm Siefer GmbH & Co. KG, Velbert

Homogenizers, high pressure

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: + 49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Microfluidics, Newton, MA

Liquid-mixer parts & accessories

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: + 49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

IKA-Werke GmbH & Co.KG, Staufen

Mixers, High Viscosity

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Pulsair Systems, Inc., Bellevue, Washington

Mixers, air driven

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admixon.com; web site: www.admix.com)

Conn and Co., L.L.C., Warren, PA

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

See our ad on page 15

Nordson SEALANT EQUIPMENT, Plymouth, MI
Pope Scientific, Inc., Saukville, Wisconsin

Mixers, anchor

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

LOTUS MIXERS INC., North Venice, FL

Mixers: barrel, drum, carboy

Conn and Co., L.L.C., Warren, PA

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mixers, batch

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Aaron Process Equipment Co., Bensenville, IL

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admixon.com; web site: www.admix.com)

Bematek Systems, Inc., Salem, MA

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Clearfield Machine Co., Clearfield, PA

Conn and Co., L.L.C., Warren, PA

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

EquipNet, Inc., Canton, MA

Gebrueder Loedige Maschinenbau GmbH, Paderborn

IKA-Werke GmbH & Co.KG, Staufen

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

Microfluidics, Newton, MA

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

See our ad on page 15

Pope Scientific, Inc., Saukville, Wisconsin

Quadro Engineering Corp., WATERLOO,

Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai

Mixers, bottom entering

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

LOTUS MIXERS INC., North Venice, FL

Mixers, chilled

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Mixers, cone

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

Mixers, continuous

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admixon.com; web site: www.admix.com)

BUSS ChemTech AG, Pratteln 1

Bematek Systems, Inc., Salem, MA

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Clearfield Machine Co., Clearfield, PA

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

EquipNet, Inc., Canton, MA

Gebrueder Loedige Maschinenbau GmbH, Paderborn

IKA-Werke GmbH & Co.KG, Staufen

JLS International, Inc., Charlotte, North Carolina

Kollo Corp., Cary, IL

Microfluidics, Newton, MA

Sulzer Chemtech USA, Inc., Tulsa, OK

Wilhelm Siefert GmbH & Co. KG, Velbert

Mixers, disc

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Conn and Co., L.L.C., Warren, PA

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

FEECO International, Inc., Green Bay, WI

EKATO GROUP

**LEADING WORLDWIDE
IN MIXING TECHNOLOGIES**

Having advanced to world market leader, EKATO has provided their customers with more than 80 years of technical excellence and experience. The companies within the EKATO GROUP offer a broad spectrum of mixing technologies.

From modularly designed industrial agitators to turnkey production plants, the EKATO GROUP provides a wide range of engineering services and custom-made solutions for the most challenging customer applications. The synergies within the EKATO GROUP ensure reliable and cost-effective solutions that meet the highest quality standards for every application. This is supported by a global service network.

www.ekato.com

Your Contact in:
Europe, Tel. +49 7622 29-0, e-mail: info@ekato.com / USA, Tel. +1 201 825 4684, e-mail: usa@ekato.com

Circle 23 on p. 190 or go to adlinks.chemengonline.com/56204-23

Mixers, gas-liquid, high intensity

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

Biazzi SA, Chailly/Montreux

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Vortab Company, San Marcos, CA

Mixers, gate

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Mixers, heated

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

IKA-Werke GmbH & Co.KG, Staufen

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Sulzer Chemtech USA, Inc., Tulsa, OK

Mixers, jet

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Elmridge Inc., Livonia, Michigan

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GAMAJET, PART OF THE ALFA LAVAL GROUP, 604 Jeffers Circle, Pennsylvania 19341 (e-mail: jessica.letscher@alfalaval.com)

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Quadro Engineering Corp., WATERLOO,

Schutte & Koerting, Treviso, PA

Mixers, paddle

AWT World Trade Inc., Chicago, IL

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Dynamic Air Inc., St. Paul, MN

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

FEECO International, Inc., Green Bay, WI

Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

LOTUS MIXERS INC., North Venice, FL

Mixers, pipeline (inline)

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

Bematek Systems, Inc., Salem, MA

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

IKA-Werke GmbH & Co.KG, Staufen

JLS International, Inc., Charlotte, North Carolina

Koflo Corp., Cary, IL

Quadro Engineering Corp., WATERLOO,

Sulzer Chemtech USA, Inc., Tulsa, OK

Wilhelm Siefert GmbH & Co. KG, Velbert

Mixers, pony

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Mixers, portable

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Conn and Co., L.L.C., Warren, PA

LOTUS MIXERS INC., North Venice, FL

Microfluidics, Newton, MA

Mixers, pressure

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Fluitron, Inc., Iyvalind, PA

JLS International, Inc., Charlotte, North Carolina

Microfluidics, Newton, MA

Pope Scientific, Inc., Saukville, Wisconsin

Mixers, propeller

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

IKA-Werke GmbH & Co.KG, Staufen

Pope Scientific, Inc., Saukville, Wisconsin

Mixers, side entering

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

LOTUS MIXERS INC., North Venice, FL

Mixers, slurry

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

Bematek Systems, Inc., Salem, MA

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Hosokawa Micron B.V., Mixing, Drying & Agglomeration,

Doetinchem,

Pope Scientific, Inc., Saukville, Wisconsin

Schutte & Koerting, Treviso, PA

Sulzer Chemtech USA, Inc., Tulsa, OK

Wilhelm Siefert GmbH & Co. KG, Velbert

Mixers, static

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

JLS International, Inc., Charlotte, North Carolina

Koflo Corp., Cary, IL

LOTUS MIXERS INC., North Venice, FL

Sahyadri Engineering Corporation

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Mixers, top entering

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Conn and Co., L.L.C., Warren, PA

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

IKA-Werke GmbH & Co.KG, Staufen

LOTUS MIXERS INC., North Venice, FL

Pope Scientific, Inc., Saukville, Wisconsin

Quadro Engineering Corp., WATERLOO,

Mixers, turbine

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

LOTUS MIXERS INC., North Venice, FL

Mixers, vacuum

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

Pope Scientific, Inc., Saukville, Wisconsin
Schutte & Koerting, Treviso, PA

Mixing equipment for gas, air

Koflo Corp., Cary, IL

MIXING EQUIPMENT FOR SOLIDS & FLUIDS

Batching & blending systems

ACRISON INC., Moonachie, NJ
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

DIVERSIFIED TOLL SERVICES, Cheshire, Connecticut
Pope Scientific, Inc., Saukville, Wisconsin
Pulsair Systems, Inc., Bellevue, Washington
Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai
Siemens Industry, Inc., Process Instrumentation & Analytics, Spring House, PA
The Industrial Controls Company, Inc.,

Blenders, cone

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

MUNSON MACHINERY COMPANY, INC., Utica, New York
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

PERMIX TEC. CO. LTD
Shiv Shakti Process Equipment P. Ltd., International Marketing & Sales, Mumbai

Blenders, continuous

ACRISON INC., Moonachie, NJ
ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

BEMATEK SYSTEMS, INC., Salem, MA
Bepex International LLC, Minneapolis, MN
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

KOFLU CORP., Cary, IL
LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

SULZER CHEMTECH USA, INC., Tulsa, OK
Vibra Screw Inc., Totowa, NJ
Wilhelm Siefert GmbH & Co. KG, Velbert

Blenders, horizontal

ACRISON INC., Moonachie, NJ
Bepex International LLC, Minneapolis, MN
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

PERMIX TEC. CO. LTD
Vibra Screw Inc., Totowa, NJ

Blenders, inline

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

BEMATEK SYSTEMS, INC., Salem, MA
Bepex International LLC, Minneapolis, MN
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

KOFLU CORP., Cary, IL
PERMIX TEC. CO. LTD
Sulzer Chemtech USA, Inc., Tulsa, OK
Wilhelm Siefert GmbH & Co. KG, Velbert

Blenders, liquid feed

BEMATEK SYSTEMS, INC., Salem, MA
Bepex International LLC, Minneapolis, MN
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

Blenders, pneumatic

DYNAMIC AIR INC., St. Paul, MN
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

PULSAIR SYSTEMS, INC., Bellevue, Washington

Blenders, ribbon

AARON PROCESS EQUIPMENT CO., Bensenville, IL
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

PERMIX TEC. CO. LTD

Sahyadri Engineering Corporation

Blenders, spiral

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

Blenders, tumbling V

BIOENGINEERING INC., Somerville, MA
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

MUNSON MACHINERY COMPANY, INC., Utica, New York
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

AMANDUS KAHL GMBH & CO. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)
AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

B & P PROCESS EQUIPMENT, Saginaw, MI
BUSS ChemTech AG, Pratteln 1
Bepex International LLC, Minneapolis, MN
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

IKA-WERKE GMBH & CO. KG, Staufen
LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

Mixers, double arm kneaders

B & P PROCESS EQUIPMENT, Saginaw, MI
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

IKA-WERKE GMBH & CO. KG, Staufen
JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

SULZER CHEMTECH USA, INC., Tulsa, OK

Mixers, high shear



Advanced Mixing Technologies

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

Bematek Systems, Inc., Salem, MA

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Conn and Co., L.L.C., Warren, PA

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

IKA-Werke GmbH & Co.KG, Staufen

JLS International, Inc., Charlotte, North Carolina

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

PerMix Tec. Co. Ltd

Quadro Engineering Corp., WATERLOO,

Vortab Company, San Marcos, CA

Wilhelm Siefert GmbH & Co. KG, Velbert

Mixers, magnetically coupled

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Fluitron, Inc., Ivyland, PA

Mixers, motionless

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

JLS International, Inc., Charlotte, North Carolina

Koflo Corp., Cary, IL

Nordson SEALANT EQUIPMENT, Plymouth, MI

Pulsair Systems, Inc., Bellevue, Washington

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Mixers, other solid-liquid

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinestr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Elmridge Inc., Livonia, Michigan

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Mars Mineral, Mars, PA

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

PerMix Tec. Co. Ltd

Wilhelm Siefert GmbH & Co. KG, Velbert

Mixers, pan

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Clearfield Machine Co., Clearfield, PA

Mars Mineral, Mars, PA

Mixers, planetary

B & P Process Equipment, Saginaw, MI

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

PerMix Tec. Co. Ltd

PerMix Tec. Co. Ltd

Mixers, ribbon

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Hosokawa Micron B.V., Mixing, Drying & Agglomeration, Doetinchem,

Kemutec Group, Inc., Bristol, PA

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mixers, roller

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Clearfield Machine Co., Clearfield, PA

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Clearfield Machine Co., Clearfield, PA

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mixers, rotary disc

Conn and Co., L.L.C., Warren, PA

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

FEECO International, Inc., Green Bay, WI

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mixers, rotary drum

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

FEECO International, Inc., Green Bay, WI

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars, PA

Mars Mineral, Mars,

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mixers, spiral screw

Bepex International LLC, Minneapolis, MN

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

PerMix Tec. Co. Ltd

Mixers, vacuum tumble

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mixers, vertical stationary

AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Conn and Co., L.L.C., Warren, PA

Mullers

Clearfield Machine Co., Clearfield, PA

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Solid-liquid-mixer parts & accessories

Bepex International LLC, Minneapolis, MN

Conn and Co., L.L.C., Warren, PA

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

IKA-Werke GmbH & Co.KG, Staufen

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

PACKINGS, TRAYS FOR TOWERS & COLUMNS

Packings, cooling tower

Delta Cooling Towers Inc., Roxbury Township, NJ
Koch Knight, LLC, East Canton, Ohio
SPX Cooling Technologies, Overland Park, KS

Packings, tower & column, ceramic

Christy Catalytics LLC, St. Louis, MO
Koch Knight, LLC, East Canton, Ohio
RVT Process Equipment, Inc., Knoxville, TN
Sulzer Chemtech USA, Inc., Tulsa, OK

Packings, tower & column, metal

AMACS, Houston, TX
Christy Catalytics LLC, St. Louis, MO
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

RVT Process Equipment, Inc., Knoxville, TN
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Packings, tower & column, plastic

AMACS, Houston, TX



KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Koch Knight, LLC, East Canton, Ohio
RVT Process Equipment, Inc., Knoxville, TN
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Packings, tower & column, random

Christy Catalytics LLC, St. Louis, MO
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Koch Knight, LLC, East Canton, Ohio
RVT Process Equipment, Inc., Knoxville, TN
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Packings, tower & column, structured

AMACS, Houston, TX
Christy Catalytics LLC, St. Louis, MO
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Koch Knight, LLC, East Canton, Ohio
RVT Process Equipment, Inc., Knoxville, TN
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Packings, trays for towers & columns

AMACS, Houston, TX
Christy Catalytics LLC, St. Louis, MO
KIRK Process Solutions Ltd, Walton-on-Thames
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

RVT Process Equipment, Inc., Knoxville, TN
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Saddles, polyethylene, tower packings

Christy Catalytics LLC, St. Louis, MO
Koch Knight, LLC, East Canton, Ohio
RVT Process Equipment, Inc., Knoxville, TN

Trays & tower internals

AMACS, Houston, TX
Creative Pultrusions, Inc., Alum Bank, PA
KIRK Process Solutions Ltd, Walton-on-Thames
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Koch Knight, LLC, East Canton, Ohio
RVT Process Equipment, Inc., Knoxville, TN
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Tiger Tower Services, Conroe, Texas

PROCESS VESSELS & REACTORS

Autoclaves

Biazzi SA, Chailly/Montreux



DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Patterson Ind. Canada, of All-Weld Company Limited, Scarborough, WSP Industries, Buffalo, NY

Biochemical equipment

RAS Process Equipment Inc., Robbinsville, NJ
Radleys

Bioreactors

Bioengineering AG, Wald.
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Pope Scientific, Inc., Saukville, Wisconsin
Veolia Water Solutions & Technologies, Moon Township, PA

Carbonylation reactors

Biazzi SA, Chailly/Montreux

Coalescers

AMACS, Houston, TX
CECO Filters, a CECO Environmental Company, Telford, Pennsylvania
Filtration & Membrane Technology, Inc., Houston, TX
Franken Filtertechnik KG, Germany, Huerth



KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.koch-glitsch.com)

Pollution Control Systems, Inc., Milford, OH
 SPX Flow Technology, Ocala, FL

Deaerator Rentals

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabash-power.com)

Deaerators, degasifiers

Advance Boiler & Tank Co., West Allis, WI
CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

CROLL-REYNOLDS CO. INC., Six Campus Drive, Parsippany, New Jersey 07054 (908-232-4200; FAX: 908-232-2146; e-mail: info@croll.com; web site: www.croll.com)

Denver Mineral Engineers, Inc., Littleton, CO

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Fulton Companies, The, Fulton Thermal Corporation, Pulaski, NY

Hilliard Corp., Elmira, NY

JAYGO, INC., 7 Emery Ave., Randolph, New Jersey 07869 (1-888-81-JAYGO; 908-688-3600; FAX: 908-688-6060; e-mail: sales@jaygoinc.com; web site: www.jaygoinc.com)

Membrana, Charlotte, NC

Pope Scientific, Inc., Saukville, Wisconsin

Digesters, cookers

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Radleys

Extraction equipment

Bepex International LLC, Minneapolis, MN

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Membrana, Charlotte, NC

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Fermentation equipment & fermentors

Bioengineering AG, Wald

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Pope Scientific, Inc., Saukville, Wisconsin

Generators, hydrogen

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Generators, nitrogen

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Pneumatech, Inc., Rock Hill, SC

Generators, oxygen

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

AirSep Corp., Äi A Chart Industries Company, A Chart Industries Company, Buffalo, New York
 Pneumatech, Inc., Rock Hill, SC

Generators, ozone

AirSep Corp., Äi A Chart Industries Company, A Chart Industries Company, Buffalo, New York

Generators, synthesis gas

Aaron Process Equipment Co., Bensenville, IL

Heads, process vessel

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Radleys

Hydrogenation plants

Biazzis SA, Chailly/Montreux

Hydrogenation reactors

Biazzis SA, Chailly/Montreux

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

Diamond Refractory Services, Texas

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Kettles, agitated

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Fluitron, Inc., Ivyland, PA

Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

Kettles, caustic

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Kettles, crystallizing

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Pope Scientific, Inc., Saukville, Wisconsin

Kettles, electrically heated

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Pope Scientific, Inc., Saukville, Wisconsin

Kettles, jacketed

Aaron Process Equipment Co., Bensenville, IL

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Patterson Ind. Canada, of All-Weld Company Limited, Scarborough, NY

Kettles, melting

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Kettles, special metals

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

Kettles, vacuum

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Pope Scientific, Inc., Saukville, Wisconsin

Oxidation plants

Biazzi SA, Chailly/Montreux

Oxidation reactors

Biazzi SA, Chailly/Montreux

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Oxidizers, catalytic

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA

Anguil Environmental Systems, Inc., Milwaukee, WI

Oxidizers, regenerative

Anguil Environmental Systems, Inc., Milwaukee, WI

Polymerizers

Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

Reactors, continuous

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

ALAQUA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alaquaa@mindspring.com; web site: www.alaquainc.com)

Biazzi SA, Chailly/Montreux

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

FEECO International, Inc., Green Bay, WI

Gebrueder Loedige Maschinenbau GmbH, Paderborn
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Midwest Steel Company Inc, Houston, Texas

Outotec (USA), Inc., Jussup, Maryland

PDC Machines, Inc., Warminster, PA

PAJ INDUSTRIES LIMITED, Praj Tower" 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

Pope Scientific, Inc., Saukville, Wisconsin

Procedyne Corp., New Brunswick, NJ

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyss-smont.com)

See our ad on page 135

Reactors, cooled, heated

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Bepex International LLC, Minneapolis, MN

Biazzi SA, Chailly/Montreux

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Fluitron, Inc., Ivyland, PA

Gebrueder Loedige Maschinenbau GmbH, Paderborn
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Outotec (USA), Inc., Jussup, Maryland

Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

Pope Scientific, Inc., Saukville, Wisconsin

Procedyne Corp., New Brunswick, NJ

Radleys

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyss-smont.com)

See our ad on page 135

Reactors, fluid bed

Bepex International LLC, Minneapolis, MN

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Procedyne Corp., New Brunswick, NJ

Reactors, gas-liquid

Biazzi SA, Chailly/Montreux



Dipesh Engineering Works
A member of J. B. Patel Group of Companies

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EKATO RUEHR- UND MISCHTECHNIK GMBH, Hohe-Flum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Fluitron, Inc., Ivyland, PA

PDC Machines, Inc., Warminster, PA

Reactors, hollow flight

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Reactors, jacketed

AVA-Americas, Herrsching,

AVA-HUEP GMBH U. CO. KG, Heinstr. 5, Herrsching, 82211 (+49 8152 9392-0; FAX: +49 8152 9392-91; e-mail: info@ava-huep.com; web site: www.ava-huep.com)

Advance Boiler & Tank Co., West Allis, WI

Bepex International LLC, Minneapolis, MN

Biogenengineering AG, Wald,

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN

De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EquipNet, Inc., Canton, MA

Outotec (USA), Inc., Jussup, Maryland

PDC Machines, Inc., Warminster, PA

Pope Scientific, Inc., Saukville, Wisconsin

Procedyne Corp., New Brunswick, NJ

Radleys

Sahyadri Engineering Corporation

WSF Industries, Buffalo, NY

Reactors, jacketed, dimple

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

PRAJ INDUSTRIES LIMITED, Praj Tower" 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

Pope Scientific, Inc., Saukville, Wisconsin

Procedyne Corp., New Brunswick, NJ

RAS Process Equipment Inc., Robbinsville, NJ

Radleys

Reactors, jacketed, half-pipe

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Reactors, lined, glass

Aaron Process Equipment Co., Bensenville, IL

EquipNet, Inc., Canton, MA

Radleys

Reactors, lined, metal

Advance Boiler & Tank Co., West Allis, WI

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Pope Scientific, Inc., Saukville, Wisconsin

Reactors, loop

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Reactors, pilot plant

Biazzi SA, Chailly/Montreux

Biogenengineering AG, Wald,

Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Fluitron, Inc., Ivyland, PA
PDC Machines, Inc., Warminster, PA
Pope Scientific, Inc., Saukville, Wisconsin
Procedyne Corp., New Brunswick, NJ
Radleys
Zeton Inc., Burlington,

Reactors, plastic lined

Outotec (USA), Inc., Jussup, Maryland
Pope Scientific, Inc., Saukville, Wisconsin

Reactors, rotary blade

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)
Radleys

Reactors, rotary disc

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Separators

Advanced Industrial Technology Corp., Paramus, NJ
ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqainc.com)

Coastal Technologies Inc., Hampton, South Carolina
Gilbert Industries, Sparta, MO
Hudson Products Corp., Houston, TX

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

SPX Flow Technology, Ocala, FL
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Walker Magnetics, Wor, Massachusetts

Sublimers

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Vessel heads

Radleys
Samuel Pressure Vessel Group, Marinette, WI

Vessels, plastic lined

FABRICATED PLASTICS LIMITED, MAPLE HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

Pope Scientific, Inc., Saukville, Wisconsin
TIGG Corporation, Oakdale, PA

Vessels, pressure, cryogenic

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Pope Scientific, Inc., Saukville, Wisconsin

Vessels, pressure, custom

Advance Boiler & Tank Co., West Allis, WI
Buchi Pilot Plant & Reactor systems, Headquarter, Uster, New York

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Chattanooga Boiler and Tank Co., Chattanooga, TN
Cobey, Buffalo, New York

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EquipNet, Inc., Canton, MA
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky

Fluitron, Inc., Ivyland, PA
INOX-TECH INC., Ste. Catherine
JLS International, Inc., Charlotte, North Carolina
Lectrodryer, Richmond, KY
Liquid Process Systems, Inc., Indian Trail, North Carolina
Niles Steel Tank, Ambler, PA
Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

Pope Scientific, Inc., Saukville, Wisconsin
Powder Systems Ltd, Liverpool
Samuel Pressure Vessel Group, Marinette, WI
Supercritical Fluid Technologies, Inc., Delaware
TIGG Corporation, Oakdale, PA

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Team Industries, Inc., Kaukauna, WI
WSF Industries, Buffalo, NY

Vessels, pressure, jacketed, diple

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

EquipNet, Inc., Canton, MA
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
Pope Scientific, Inc., Saukville, Wisconsin
Samuel Pressure Vessel Group, Marinette, WI

Vessels, pressure, multilayered heavy wall

FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
JLS International, Inc., Charlotte, North Carolina

Vessels, pressure, safety sight glass

Samuel Pressure Vessel Group, Marinette, WI

TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Washers, continuous belt

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Washers, horizontal vacuum filter

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Washers, spray

Alfa Laval Tank Equipment, Exton, Pennsylvania
Progressive Recovery Inc., Dupo, IL

REACTION & SEPARATION EQUIPMENT, OTHER

Acid gas removal systems

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

Aerators

Conveyor Components Co., Material Control, Inc., Crosswell, MI
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
See our ad on page 105

Membrana, Charlotte, NC
Monitor Technologies LLC, Elburn, IL
Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
See our ad on page 15

Atomizers

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

CIP Spray Nozzles

Evaporator Dryer Technologies, Hammond, Wisconsin

Chromatography, production-scale equipment

Ameridia, Div. of Eurodia Industries, Somerset, NJ
PDR-Separations LLC, Palm Beach Gardens, FL

Diffusers, spargers

Micromold Products, Inc., Yonkers, New York
Mott Corporation, 84 Spring Lane, Farmington, CT 06032-3159 (800-289-6688; 860-747-6333; FAX: 860-747-6739; e-mail: quest@mottcorp.com; web site: www.mottcorp.com)

Pollution Control Systems, Inc., Milford, OH
Schutte & Koerting, Trevoze, PA

Diverfers

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
See our ad on page 15

Extractors, centrifugal

B & P Process Equipment, Saginaw, MI

Hydrogen generation units

SPX Flow Technology, Ocala, FL

Manways

Evaporator Dryer Technologies, Hammond, Wisconsin

Membrane systems for gases

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

BORSIG GmbH, Berlin

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Membrane systems for liquids

Ameridia, Div. of Eurodia Industries, Somerset, NJ

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

GEA Engineering, P.C., Nanuet, NY

MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

Membrana, Charlotte, NC

Microdyn Technologies, Inc., Raleigh, North Carolina
Progressive Recovery Inc., Duplo, IL

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Mixer-settlers

Denver Mineral Engineers, Inc., Littleton, CO
Franken Filtertechnik KG, Germany, Huerth

Monomer-recovery systems

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Pope Scientific, Inc., Saukville, Wisconsin

Natural gas processing plants

Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main

Nozzles, atomizing

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

Spraying Systems Co., Wheaton, IL

Nozzles, mixing

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-234-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Elmridge Inc., Livonia, Michigan

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Micromold Products, Inc., Yonkers, New York

Nozzles, spray

Alfa Laval Tank Equipment, Exton, Pennsylvania

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

Evaporator Dryer Technologies, Hammond, Wisconsin

KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

PNR AMERICA, LLC, Poughkeepsie, NY

Pollution Control Systems, Inc., Milford, OH

Spraying Systems Co., Wheaton, IL

Oil purification equipment

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Pervaporation equipment

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Separators for metals

Denver Mineral Engineers, Inc., Littleton, CO
Industrial Magnetics, Inc., Boyne City, Michigan
Walker Magnetics, Wor, Massachusetts

Solvent extraction systems

B & P Process Equipment, Saginaw, MI

LIST AG, Berstelstrasse 24, Arisdorf 4422 (41-61-815-30-00; FAX: 41-61-815-30-01; e-mail: info@list.ch)

Solvent recovery systems

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alaquainc.com)

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@croil.com; web site: www.crcleanair.com)

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

EDWARDS US HEADQUARTERS, Sanborn, NY

Franken Filtertechnik KG, Germany, Huerth
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Hilliard Corp., Elmira, NY

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5475 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Munters Corporation, Buena Vista, VA

NexGen Enviro Systems Inc., Lindenhurst, NY
PRAJ INDUSTRIES LIMITED, Praj Tower* 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

Pope Scientific, Inc., Saukville, Wisconsin

Progressive Recovery Inc., Duplo, IL
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Solvent recycling systems

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alaquainc.com)

Progressive Recovery Inc., Duplo, IL

beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Sprayers

Alfa Laval Tank Equipment, Exton, Pennsylvania

PNR AMERICA, LLC, Poughkeepsie, NY

Strippers, air

Advanced Industrial Technology Corp., Paramus, NJ
CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

Supercritical fluid extraction processing

Supercritical Fluid Technologies, Inc., Delaware

Syngas generation units

Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main
Diamond Refractory Services, Texas

SCREENING EQUIPMENT

Screening

American Fabric Filter Co., Wesley Chapel, FL
Great Western Mfg. Co., Leavenworth, KS
Kinergy Corp., Louisville, KY

Particle Reduction Service, Elk Grove Village, IL
Sefar Inc., Buffalo, New York
Vibra Screw Inc., Totowa, NJ

Westech Engineering Inc., Salt Lake City, UT
YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysinc@ys-inc.com; web site: www.ys-inc.com)

Screens, air

Great Western Mfg. Co., Leavenworth, KS
RKI Instruments, Inc., Union City, CA

Screens, bar

MM Industries Inc., Vorti-Siv, Salem, OH
Tema Systems, Inc., Cincinnati, OH
Vibra Screw Inc., Totowa, NJ

Screens, centrifugal

Kason Corp., Millburn, New Jersey
Kemutec Group, Inc., Bristol, PA
Prater-Sterling, Bollingbrook, IL
Sefar Inc., Buffalo, New York
Tema Systems, Inc., Cincinnati, OH
Western States Machine Co., Hamilton, OH

Screens, cylindrical

Kason Corp., Millburn, New Jersey
MM Industries Inc., Vorti-Siv, Salem, OH
Sefar Inc., Buffalo, New York

Screens, grizzly

Kinergy Corp., Louisville, KY

Screens, gyratory

Great Western Mfg. Co., Leavenworth, KS
Kason Corp., Millburn, New Jersey
MM Industries Inc., Vorti-Siv, Salem, OH

Screens, milled slot

MM Industries Inc., Vorti-Siv, Salem, OH

Screens, perforated plate

Tema Systems, Inc., Cincinnati, OH

Screens, rotary

Great Western Mfg. Co., Leavenworth, KS
MM Industries Inc., Vorti-Siv, Salem, OH

Screens, stationary

Schenck Process GmbH, Darmstadt

Screens, synthetic

Great Western Mfg. Co., Leavenworth, KS
Sefar Inc., Buffalo, New York

Screens, testing

Great Western Mfg. Co., Leavenworth, KS

Screens, vibrating

Great Western Mfg. Co., Leavenworth, KS
Kason Corp., Millburn, New Jersey
Kinergy Corp., Louisville, KY
Schenck Process GmbH, Darmstadt
Sefar Inc., Buffalo, New York
Thermotron, Holland, MI
Vibra Screw Inc., Totowa, NJ

Screens, wire

American Fabric Filter Co., Wesley Chapel, FL
G Bopp USA Inc., Wappingers Falls, NY
Great Western Mfg. Co., Leavenworth, KS
MM Industries Inc., Vorti-Siv, Salem, OH

Separators, magnetic

Industrial Magnetics, Inc., Boyne City, Michigan

KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4775; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.strainers.com)

Magnetic Products, Inc., Highland, MI
Metso Minerals Industries, Inc., York, PA
Walker Magnetics, Wor, Massachusetts

Sieves

American Fabric Filter Co., Wesley Chapel, FL
Great Western Mfg. Co., Leavenworth, KS
Quadro Engineering Corp., WATERLOO, Sefar Inc., Buffalo, New York

Sifters, sifting machines

American Fabric Filter Co., Wesley Chapel, FL
Great Western Mfg. Co., Leavenworth, KS
Kason Corp., Millburn, New Jersey
Prater-Sterling, Bollingbrook, IL

Wire cloth

CPI Wirecloth & Screens Inc, Pearland, TX
G Bopp USA Inc., Wappingers Falls, NY
MM Industries, Inc., Vort-Siv, Salem, OH

Wire mesh

AMACS, Houston, TX
CPI Wirecloth & Screens Inc, Pearland, TX
Coastal Technologies Inc., Hampton, South Carolina
G Bopp USA Inc., Wappingers Falls, NY

KRAISSL CO. INC., 299 Williams Ave., Hackensack, New Jersey 07601-5225 (800-572-4775; 201-342-0008; FAX: 201-342-0025; e-mail: kraissl@aol.com; web site: www.strainers.com)

MM Industries, Inc., Vort-Siv, Salem, OH

SCRUBBERS

Scrubbers, centrifugal

Advanced Industrial Technology Corp., Paramus, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
Hudson Products Corp., Houston, TX
KIRK Process Solutions Ltd, Walton-on-Thames
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, conical

Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, cyclone

Advanced Cyclone Systems, S. A., Porto
Advanced Industrial Technology Corp., Paramus, NJ
Ambient Engineering Inc., Rocky Hill, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
KIRK Process Solutions Ltd, Walton-on-Thames
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, fluidized bed

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
CECO Filters, a CECO Environmental Company, Telford, Pennsylvania
CPFD-Software, Albuquerque, New Mexico
Diamond Refractory Services, Texas

Scrubbers, fume, gas

Advanced Industrial Technology Corp., Paramus, NJ
Ambient Engineering Inc., Rocky Hill, NJ

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

CR CleanAir

Leaders in Clean Air Technology

CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)
FABRICATED PLASTICS LIMITED, MAPLE
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan



KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

McGill AirClean LLC, Columbus, OH
Schutte & Koerting, Trevese, PA
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, impingement baffle

Advanced Industrial Technology Corp., Paramus, NJ
Ambient Engineering Inc., Rocky Hill, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, jet

Advanced Industrial Technology Corp., Paramus, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

CR CleanAir

Leaders in Clean Air Technology

CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)
See our ad on page 105

Schutte & Koerting, Trevese, PA
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, oil mist

Advanced Industrial Technology Corp., Paramus, NJ
Ambient Engineering Inc., Rocky Hill, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)
Coastal Technologies Inc., Hampton, South Carolina

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, orifice

Advanced Industrial Technology Corp., Paramus, NJ
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, packed column

Advanced Air Technologies, Inc., Corunna, MI
Advanced Industrial Technology Corp., Paramus, NJ
ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alauqa.com)

Ambient Engineering Inc., Rocky Hill, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)
Delta Cooling Towers Inc., Roxbury Township, NJ
FABRICATED PLASTICS LIMITED, MAPLE
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
See our ad on page 89

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

PRAJ INDUSTRIES LIMITED, Praj Tower[®] 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

Schutte & Koerting, Trevese, PA
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, plate column

Advanced Industrial Technology Corp., Paramus, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, rotary

Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, spray

Advanced Industrial Technology Corp., Paramus, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
Branch Environmental Corp., Somerville, NJ
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@roll.com; web site: www.crcleanair.com)

Evaporator Dryer Technologies, Hammond, Wisconsin
FISHER-KLOSTERMAN EMTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

KOMLINE-SANDERSON ENGINEERING CORP., 125 Holiland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@konline.com; web site: www.konline.com)

See our ad on page 137

McGill AirClean LLC, Columbus, OH
Spraying Systems Co., Wheaton, IL
Turner EnviroLogic, Inc., Deerfield Beach, FL
Westchester Germicide Co., Pittsburgh, PA

Scrubbers, venturi

Advanced Industrial Technology Corp., Paramus, NJ
Ambient Engineering Inc., Rocky Hill, NJ

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

Branch Environmental Corp., Somerville, NJ

CR CleanAir

Leaders in Clean Air Technology

CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@crroll.com; web site: www.crleanair.com)

Elmridge Inc., Livonia, Michigan
FISHER-KLOSTERMAN ENTROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
KOERTING HANNOVER AG, Badenstedter Str. 56, Hannover, 30453 (0511-2129-0; FAX: 0511-2129-223; e-mail: st@koerting.de; web site: www.koerting.de)

See our ad on page 105

Schutte & Koerting, Treviso, PA
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Scrubbers, wire mesh tray

Advanced Industrial Technology Corp., Paramus, NJ
 Ambient Engineering Inc., Rocky Hill, NJ

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

Turner EnviroLogic, Inc., Deerfield Beach, FL

SIZE REDUCTION EQUIPMENT

Breakers

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Chippers

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Comminutors

AAAmachine, Inc., Des Plaines, IL
 FRITSCH GmbH, Milling and Sizing, Idar-Oberstein

Pollution Control Systems, Inc., Millford, OH
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Crushers, cone

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Crushers, fluid energy

AAAmachine, Inc., Des Plaines, IL
Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

Crushers, gyratory

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Crushers, impact

American Pulverizer, St. Louis, MO
 Stedman, Aurora, IN
Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Crushers, jaw

FRITSCH GmbH, Milling and Sizing, Idar-Oberstein
Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Crushers, prebreaker

Alexanderwerk AG, Remscheid
 American Pulverizer, St. Louis, MO
 Bepex International LLC, Minneapolis, MN
 FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg
 FRITSCH GmbH, Milling and Sizing, Idar-Oberstein
 Kemtec Group, Inc., Bristol, PA

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Crushers, rotary

American Pulverizer, St. Louis, MO
 Bepex International LLC, Minneapolis, MN
 Boerger Pumps, Chanhassen, MN
 Munson Machinery Company, Inc., Utica, New York
Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Crushers, rotary blade

Boerger Pumps, Chanhassen, MN
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Disintegration equipment parts & accessories

Bepex International LLC, Minneapolis, MN
 Herbold Meckesheim USA, Resource Recycling Systems Inc., Slatersville, RI
 Security Engineered Machinery, Westboro, MA

Flakers

Herbold Meckesheim USA, Resource Recycling Systems Inc., Slatersville, RI

Ludman Industries, Milwaukee, WI

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

SANDVIK PROCESS SYSTEMS, INC., 21 Campus Rd., Totowa, NJ 07512 (973-790-1600; FAX: 973-790-3377; e-mail: info@sandvik.com; web site: www.processsystems.sandvik.com)

Hogs

American Pulverizer, St. Louis, MO

Lumpbreakers

American Pulverizer, St. Louis, MO
 Bepex International LLC, Minneapolis, MN
 Dynamic Air Inc., St. Paul, MN
 FEECO International, Inc., Green Bay, WI
 FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg
 Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania
 Kemutec Group, Inc., Bristol, PA
 Kinergy Corp., Louisville, KY
 Material Transfer & Storage Inc., Allegan, MI
 Munson Machinery Company, Inc., Utica, New York
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Prater-Sterling, Bollingbrook, IL
 Stedman, Aurora, IN
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Lumpbreakers for solid & liquid systems

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Mills, attrition

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Bepex International LLC, Minneapolis, MN
 Munson Machinery Company, Inc., Utica, New York
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Mills, ball

Aaron Process Equipment Co., Bensenville, IL
 FRITSCH GmbH, Milling and Sizing, Idar-Oberstein
 Metso Minerals Industries, Inc., York, PA
PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Tema Systems, Inc., Cincinnati, OH
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Mills, cage

Stedman, Aurora, IN
WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Mills, colloid

Bematek Systems, Inc., Salem, MA

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)
See our ad on page 6

Wilhelm Siefert GmbH & Co. KG, Velbert

Mills, cone

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg
Kemetec Group, Inc., Bristol, PA
Quadro Engineering Corp., WATERLOO,

Mills, disc

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)
See our ad on page 6

FRITSCH GmbH, Milling and Sizing, Idar-Oberstein
Modern Process Equipment, Inc., Chicago, IL
Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

Tema Systems, Inc., Cincinnati, OH

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Mills, grinding

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

American Pulverizer, St. Louis, MO

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg

FRITSCH GmbH, Milling and Sizing, Idar-Oberstein

Kemetec Group, Inc., Bristol, PA

Metsko Minerals Industries, Inc., York, PA

Modern Process Equipment, Inc., Chicago, IL

NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Prater-Sterling, Bollingbrook, IL

Quadro Engineering Corp., WATERLOO,

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

Tema Systems, Inc., Cincinnati, OH

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysinc@ys-inc.com; web site: www.ys-inc.com)

Mills, hammer

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)

American Pulverizer, St. Louis, MO

Bepex International LLC, Minneapolis, MN

FEECO International, Inc., Green Bay, WI

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg

Munson Machinery Company, Inc., Utica, New York

Prater-Sterling, Bollingbrook, IL

Stedman, Aurora, IN

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysinc@ys-inc.com; web site: www.ys-inc.com)

Mills, homogenizing

ADMIX INC., 144 Harvey Road, Londonderry, New Hampshire 03053 (800-466-2369; 603-627-2340; FAX: 603-627-2019; e-mail: mixing@admix.com; web site: www.admix.com)

Bematek Systems, Inc., Salem, MA

Bepex International LLC, Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg

Modern Process Equipment, Inc., Chicago, IL

Wilhelm Siefert GmbH & Co. KG, Velbert

Mills, impact

American Pulverizer, St. Louis, MO

Bepex International LLC, Minneapolis, MN

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg

FRITSCH GmbH, Milling and Sizing, Idar-Oberstein

Munson Machinery Company, Inc., Utica, New York

Quadro Engineering Corp., WATERLOO,

Stedman, Aurora, IN

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Mills, jacketed ball

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Tema Systems, Inc., Cincinnati, OH

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Mills, jet

AAAmachine, Inc., Des Plaines, IL

PSL USA, Boise, ID

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

Mills, other

FREWITT manufacturer of machines Ltd., WE CARE ABOUT MILLING, Fribourg

Modern Process Equipment, Inc., Chicago, IL

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

Mills, pebble

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mills, pug

FEECO International, Inc., Green Bay, WI

Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

Mills, ring roll

American Pulverizer, St. Louis, MO

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Mills, rod

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Mills, roller

AMANDUS KAHL GmbH & Co. KG, Dieselstr. 5-9, Reinbek, 21465 (49-40-72-7710; FAX: 49-40-72-771100; e-mail: info@amandus-kahl-group.de; web site: www.akahl.de)

Buhler Inc., Minneapolis, MN

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 135

EXAKT Technologies, Inc., Oklahoma City, OK

Ludman Industries, Milwaukee, WI

Modern Process Equipment, Inc., Chicago, IL

NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

Mills, tube

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mills, tumbling

PAUL O. ABBE, 735 East Green St., Bensenville, Illinois 60106 (800-524-2188 US; 630-350-3012; FAX: 630-238-7584; e-mail: sales@pauloabbe.com; web site: www.pauloabbe.com)

See our ad on page 24

Mills, vertical

AAAmachine, Inc., Des Plaines, IL

Bepex International LLC, Minneapolis, MN

Sturtevant Inc., 348 Circuit St., Hanover, MA 02339-2129 (800-992-0209 North America Only; 781-829-6501; FAX: 781-829-6515; e-mail: sales@sturtevantinc.com; web site: www.sturtevantinc.com)

WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Refiners, particle size

FrymaKoruma, New Jersey

Shredders

Alexanderwerk AG, Remscheid

American Pulverizer, St. Louis, MO

Bepex International LLC, Minneapolis, MN

Borger Pumps, Chanhassen, MN

Herbold Meckesheim USA, Resource Recycling Systems Inc., Slatesville, RI

Munson Machinery Company, Inc., Utica, New York

Security Engineered Machinery, Westboro, MA

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

TOWERS & COLUMNS

Columns, absorption or adsorption

Advanced Industrial Technology Corp., Paramus, NJ
AirSep Corp., Ai A Chart Industries Company, A Chart Industries Company, Buffalo, New York

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

Midwest Steel Company Inc, Houston, Texas

PRAJ INDUSTRIES LIMITED, Praj Tower" 274 & 275, Bhumkar Chowk-Hinjewadi Road., Hinjewadi, Pune 411057. (+912022951511; FAX: +912022951718; e-mail: info@praj.net; web site: www.praj.net)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Tiger Tower Services, Conroe, Texas

Columns, bubble cap

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

RAS Process Equipment Inc., Robbinsville, NJ
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Tiger Tower Services, Conroe, Texas

Columns, contacting or mixing

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

RAS Process Equipment Inc., Robbinsville, NJ

Columns, custom fabricated

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Enerquip, LLC, Medford, WI
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

JLS International, Inc., Charlotte, North Carolina
Patterson Ind. Canada, of All-Weld Company Limited, Scarborough,

Pope Scientific, Inc., Saukville, Wisconsin
RAS Process Equipment Inc., Robbinsville, NJ
TITAN METAL FABRICATORS, ENGINEERED PRODUCTS, 352 Balboa Circle, Camarillo, California 93012 (805 487 5050; FAX: 805 487 5050; e-mail: info@titanmf.com; web site: www.titanmf.com)

Team Industries, Inc., Kaukauna, WI
Tiger Tower Services, Conroe, Texas

Columns, fluidized bed

CPFD-Software, Albuquerque, New Mexico
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Columns, graphite

Nantong Fareast Chemical Equipment Co. LTD, International Trading, Nantong

Columns, ion exchange

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alaquainc.com)

Columns, packed

Advanced Industrial Technology Corp., Paramus, NJ
ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alaquainc.com)

BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)

De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)

Delta Cooling Towers Inc., Roxbury Township, NJ
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

FABRICATED PLASTICS LIMITED, MAPLE
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Koch Knight, LLC, East Canton, Ohio
Pope Scientific, Inc., Saukville, Wisconsin
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Tiger Tower Services, Conroe, Texas

Columns, thin film

Pope Scientific, Inc., Saukville, Wisconsin

Columns, vacuum

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

Pope Scientific, Inc., Saukville, Wisconsin
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Tiger Tower Services, Conroe, Texas

Columns, valve tray

ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alaquainc.com)

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Tiger Tower Services, Conroe, Texas

Columns, wire mesh tray

DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

Tiger Tower Services, Conroe, Texas

Distillation columns, automatic packaged unit

CTP Corp., Northport, NY
Pope Scientific, Inc., Saukville, Wisconsin
Progressive Recovery Inc., Duplo, IL

Distillation columns, molecular distillation

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)



DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Pope Scientific, Inc., Saukville, Wisconsin

Distillation columns, sieve tray

AMACS, Houston, TX
Advanced Industrial Technology Corp., Paramus, NJ
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.kochglitsch.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Tiger Tower Services, Conroe, Texas

Distillation columns, steam stripping

Advanced Industrial Technology Corp., Paramus, NJ
ALAUQA, INC., 7004 JFK BOULEVARD EAST, SUITE 28A, Guttenberg, New Jersey 07093 (201-758-1577; FAX: 201-758-1522; e-mail: alauqa@mindspring.com; web site: www.alaquainc.com)



DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)

See our ad on page 61

GEA France,
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Distillation columns, vapor compression



DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road., Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipesh-engg.net; web site: www.dipeshengg.com)

See our ad on page 61

GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.co

See our ad on page 89

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

Online diagnostics of columns

TowerScan, Port Huron, MI
TowerScan, Sarnia,
TowerScan, Port Huron, MI

Tower parts & accessories

AMACS, Houston, TX
Coastal Technologies Inc., Hampton, South Carolina
KOCH-GLITSCH, 4111 E. 37th St. N., Wichita, Kansas 67220 (316-828-5110; FAX: 316-828-7985; e-mail: info.wichita@kochglitsch.com; web site: www.koch-glitsch.com)

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

Sulzer Chemtech USA, Inc., Tulsa, OK
Swager Communications, Fremont, IN
Tiger Tower Services, Conroe, Texas

WATER TREATMENT EQUIPMENT

Boiler feedwater systems

Bryan Steam LLC, Peru, IN
Evoqua, Alpharetta, Georgia
GEA Engineering, P.C., Nanuet, NY
HydroTec Systems Co., Inc., Tiskilwa, IL
Hydro-Thermal Corp., Waukesha, WI
INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)
Roth Pump, Rock Island, Illinois
Veolia Water Solutions & Technologies, Moon Township, PA
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Cooling-water treatment, chemical

Petron Plus Global, Inc., Hutchinson, Kansas
Veolia Water Solutions & Technologies, Moon Township, PA
sera ProDos GmbH, Immenhausen,

Desalination units

Ameridia, Div. of Eurodia Industries, Somerset, NJ
Cat Pumps, Minneapolis, MN
GEA Engineering, P.C., Nanuet, NY
HydroTec Systems Co., Inc., Tiskilwa, IL
PCA GmbH, Heusweiler

Electrodialysis units

Ameridia, Div. of Eurodia Industries, Somerset, NJ
PCA GmbH, Heusweiler
beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Hypochlorinators

Fluid Metering, Inc., 5 Aerial Way, Suite 500, Syosset, New York 11791 (800-223-3388; 516-922-6050; FAX: 516-624-8261; e-mail: pumps@fmipump.com; web site: www.fmipump.com)

Ion exchanger equipment

Ameridia, Div. of Eurodia Industries, Somerset, NJ
HydroTec Systems Co., Inc., Tiskilwa, IL
TIGG Corporation, Oakdale, PA
United Manufacturing International 2000, Red Bluff, CA
Veolia Water Solutions & Technologies, Moon Township, PA

Ozonators

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

AirSep Corp., Ai A Chart Industries Company, A Chart Industries Company, Buffalo, New York

Precipitators, water treating

Veolia Water Solutions & Technologies, Moon Township, PA

Resins, ion exchange

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

United Manufacturing International 2000, Red Bluff, CA

Reverse osmosis systems

Cat Pumps, Minneapolis, MN
Evoqua, Alpharetta, Georgia
Filtration & Membrane Technology, Inc., Houston, TX
GEA Engineering, P.C., Nanuet, NY
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

HydroTec Systems Co., Inc., Tiskilwa, IL
ProSonic LLC, Milwaukee, WI
Veolia Water Solutions & Technologies, Moon Township, PA
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)
beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Ultrafiltration systems

Argonide Corporation, Sanford, FL
GEA Engineering, P.C., Nanuet, NY
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)

See our ad on page 89

Membrana, Charlotte, NC
Veolia Water Solutions & Technologies, Moon Township, PA
Westech Engineering Inc., Salt Lake City, UT
beroplan GmbH Membran- und Prozesstechnik, St. Ingbert

Ultraviolet disinfection systems

Newman Regency Group, Stafford, TX

Water-conditioning package systems

Acriston Inc., Monachie, NJ
HydroTec Systems Co., Inc., Tiskilwa, IL
Veolia Water Solutions & Technologies, Moon Township, PA
sera ProDos GmbH, Immenhausen,

Water pollution systems

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Entex Technologies Inc, Chapel Hill, NC
Evoqua, Alpharetta, Georgia
GEA Engineering, P.C., Nanuet, NY
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Ososso, Michigan

HONEYWELL, 101 Columbia Rd., Morristown, New Jersey 07962 (800-626-4974; 973-455-2000; FAX: 973-455-5722)

Jacobi Carbons, Inc., Columbus, OH
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

TIGG Corporation, Oakdale, PA
Veolia Water Solutions & Technologies, Moon Township, PA

Water treatment control equipment

Biowater Technology, Cumberland, Rhode Island
Dr. Thiedig GmbH & Co KG, Berlin
Encon Evaporators, Hooksett, NH
Entex Technologies Inc, Chapel Hill, NC
SIERRA INSTRUMENTS, INC., 5 Harris Ct., Bldg. L, Monterey, California 93940 (800-866-0200; 831-373-0200; FAX: 831-373-4402; e-mail: info@sierrainstruments.com; web site: www.sierrainstruments.com)
The Industrial Controls Company, Inc., Veolia Water Solutions & Technologies, Moon Township, PA
Walchem, IWAKI America, Inc., Holliston, MA
sera ProDos GmbH, Immenhausen,

CHEMICAL ENGINEERING ESSENTIALS FOR THE CPI PROFESSIONAL

RECEIVE FULL ACCESS
to ALL of Chemical Engineering's Facts at Your Fingertips articles in one convenient location.

Receive full access today by visiting
www.chemengonline.com/magazine/facts-at-your-fingertips

EACH INFORMATION PACKED PDF ARTICLE includes graphs, charts, tables, equations and columns on the full chemical engineering processes you deal with on a daily basis. This is the tool you will come to rely on, referring back to the information again and again with just the click of a mouse.

Facts at Your Fingertips Topics Include:

- Conservation Economics: Carbon Pricing Impacts
- Distillation Tray Design
- Burner Operating Characteristics
- Measurement Guide for Replacement Seals
- Steam Tracer Lines and Traps
- Positive Displacement Pumps
- Low-Pressure Measurement for Control Valves
- Creating Installed Gain Graphs
- Aboveground and Underground Storage Tanks
- Chemical Resistance of Thermoplastics
- Heat Transfer: System Design II
- Adsorption
- Flowmeter Selection
- Speciality Metals
- Plus much, much more...



CHEMICAL ENGINEERING

ESSENTIALS FOR THE CPI PROFESSIONAL

The Chemical Engineering store offers a variety of industry topics you will come to rely on including textbooks, PDF guidebooks, wall charts, maps, newsletters, CD's and much more.

Advanced Engineering Mathematics, 5th Edition
Applied Mathematics And Modeling For Chemical Engineers, 2nd Edition
Avoiding Leakage Seals and Sealing Systems for Machinery and Piping
Chementator Guidebook Series
Chemical Engineering Buyers' Guide
Chemical Engineering Distillation Guidebook
Chemical Engineering Facts at Your Fingertips Guidebook Series
Chemical Engineering Features Report Guidebook Series
Chemical Engineering's Process Water and Wastewater Treatment and Reuse Guidebook- Volume 1
Chemical Reaction Engineering, 3rd Edition
Compact Heat Exchangers
Compressors: Selection and Cost Engineering- Volume One
Compressors: Applications and Maintenance- Volume Two
Concurrent / Simultaneous Engineering Methods, Tools and Case Studies Within a Lean Six-Sigma Quality Framework
Control and Automation: Volume 1- Process Control
Control and Automation: Volume 2- Process Automation
Control and Automation: Volume 3- Sensors
CPI Plant Safety: Volume 1- Managing Pressure Risk and Minimizing Leakage
CPI Plant Safety: Volume 2- Managing Explosion and Fire Risks
CPI Plant Safety: Volume 3- Managing Safety Systems to Reduce Risk
Crystallization and Related Operations
Environmental Management: Air-Pollution Control
Environmental Management: Wastewater and Groundwater Treatment
Fluid Handling
Gas Engineers Handbook- CD ROM
Gas-Solid and Liquid-Solid Separation
Guidelines for Engineering Design for Process Safety, 2nd Edition
Guidelines for Risk Based Process Safety
Hazardous Chemicals Safety & Compliance Handbook for the Metalworking Industries
Heat Exchanger and Condenser Tubes: Tube Types – Materials – Attributes – Machining
Heat Exchanger Fouling- Fundamental Approaches and Technical Solutions
Heat Exchanger Fouling- Mitigation and Cleaning Technologies
Heat Recovery Steam Generators
Instrumentation Guidebook- Volume 1
Instrumentation Guidebook- Volume 2
Liquid-Liquid and Gas-Liquid Separation
Machine Designers Reference
Machine Shop Trade Secrets, 2nd Edition
Machinery's Handbook 29th Edition - Large Print
Managing Bulk Solids
Managing Steam: Volume 1 — Best Practices for Producing and Using Steam
Managing Steam: Volume 2 —Focus on Inlet Water Treatment and Energy Efficiency
Metering Pumps Handbook
Minimizing Corrosion and Fouling: Volume 1 — Strategies and Materials
Minimizing Corrosion and Fouling: Volume 2 — Equipment-Specific Best Practice
Mixers and Mixing
Mixing, Blending and Agglomeration: Volume 1 — Combining Liquids
Mixing, Blending and Agglomeration: Volume 2 —Combining Bulk Solids
Organic Chemistry Wall Chart
Pipe Flow: A Practical and Comprehensive Guide
Pipefitters Handbook, Third Edition
Piping Design and Operations Guidebook- Volume 1
Piping Design and Operations Guidebook- Volume 2
Plant and Personnel Safety
Plant Operation and Maintenance , Volume 1- Chemical Process Equipment
Plant Operation and Maintenance, Volume 2- Procedures and Best Practices
Positive Displacement Pumps: Wall Chart
Pristine Processing
Process Water and Wastewater Treatment and Reuse Guidebook- Volume 2
Project Management and Cost Engineering: Strategic Planning and Implementation- Volume 1
Project Management and Cost Engineering: Equipment-Specific Tips and Strategies - Volume 2
Pumping Fundamentals— Volume 1: Design and Selection
Pumping Fundamentals— Volume 2: Operations and Maintenance
Reactors and Reaction Engineering: Volume 1 - Equipment and Instrumentation
Renewable Chemicals and Fuels: Expansion and Commercialization Roundup Guidebook
Solids Processing Guidebook- Volume 1
Technology Profiles Compilation Guidebooks
Thermal Management
Valves Wall Chart
Wallchart: Factors For Unit Conversion
Water Quality Engineering: Physical / Chemical Treatment Processes
You & Your Job - Practical Resources for Chemical Engineers Guidebook

Find additional information on these titles by visiting store.chemengonline.com

6

ENGINEERING MATERIALS

- | | | | |
|------------|--|------------|--|
| 166 | Aluminum & aluminum alloys | 168 | Metals & alloys, other nonferrous |
| 166 | Ceramics, including glass | 169 | Nickel & nickel alloys |
| 167 | Composites | 169 | Plastics materials |
| 167 | Copper & copper alloys | 169 | Protective coatings & linings |
| 167 | Insulation materials | 170 | Refractory materials |
| 167 | Iron & iron alloys | 170 | Rubber & rubberlike materials |
| 168 | Lubricants | 170 | Stainless steels |
| 168 | Materials for buildings & building construction | 170 | Steels |

DISPLAY ADVERTISERS IN THIS SECTION

Saint-Gobain Ceramics

167

ALUMINUM & ALUMINUM ALLOYS

Aluminum

OR Co 0908 002, New York
TW Metals, Exton, PA

Aluminum alloys

Milward Alloys, Lockport, NY
OR Co 0908 002, New York

CERAMICS, INCLUDING GLASS

Carbides

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

3M Technical Ceramics, Kempen, Germany

SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS,
23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com;
web site: www.hexoloy.com)
See our ad on page 167

Carbon & graphite

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

CG Thermal LLC, Twinsburg, Ohio
Scenic Precise Element Inc., Kaohsiung City

Fibers, mineral

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Fused silica

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Technical Glass Products, Painesville, OH

Glass

De Dietrich Process Systems GmbH, Hattenbergstr. 36,
Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704
500; e-mail: mail@qvf.de; web site: www.qvf.com)

Goel Scientific Glass Works, Baroda
Technical Glass Products, Painesville, OH

Porcelain & stoneware, chemical

Koch Knight, LLC, East Canton, Ohio
P-Ker Engineering, Watertown, NY

Powders, ceramic

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Quartz

Technical Glass Products, Painesville, OH

Silicon carbide

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

3M Technical Ceramics, Kempen, RKL Instruments, Inc., Union City, CA

SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS, 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com; web site: www.hexoloy.com)

See our ad on page 167

Scenic Precise Element Inc., Kaohsiung City

Tile

Abresist Kalenborn Corporation, Urbana, IN

SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS, 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com; web site: www.hexoloy.com)

See our ad on page 167

COMPOSITES

Carbon-carbon composites

Creative Pultrusions, Inc., Alum Bank, PA
Greene, Tweed & Co., Kulpville, PA

Ceramic metals

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

P-Ker Engineering, Waterport, NY

COPPER & COPPER ALLOYS

Brass

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Bronze

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Copper

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Copper alloys, other

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Milward Alloys, Lockport, NY
Wall Colmonoy Corporation, Madison Heights, MI

INSULATION MATERIALS

Insulation, asbestos replacement

ZIRCAR Refractory Composites, Inc., Florida, NY

Insulation, coatings & sealers

Epoxies, Etc., Rhode Island
Synthetic Surfaces Inc., Scotch Plains, NJ
ZIRCAR Refractory Composites, Inc., Florida, NY

Insulation, glass fiber

Technical Glass Products, Painesville, OH

Insulation, high temperature

P-Ker Engineering, Waterport, NY
Sauereisen, Pittsburgh, PA

Insulation, low temperature

Meyer Tool & Mfg., Inc., oaklawn, IL

Insulation, refractory

Christy Catalytics LLC, St. Louis, MO
Sauereisen, Pittsburgh, PA

Insulation, urethane foam

Covestro LLC, Pittsburgh, Pennsylvania

Jacketing, insulation

Polyguard Products, Inc., Ennis, TX

IRON & IRON ALLOYS

Cast irons

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Clearfield Machine Co., Clearfield, PA
OR Co 0908 002, New York

Cast irons, alloy

AMERICAN ELEMENTS, Los Angeles, California 90024
(310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Clearfield Machine Co., Clearfield, PA
OR Co 0908 002, New York

Stays Stronger. Lasts Longer.

Hexoloy® Sintered Silicon Carbide

Superior Performance

- Universal corrosion resistance
- High thermal conductivity
- Excellent wear resistance
- Superior oxidation resistance
- High strength at high temperature
- Low coefficient of friction
- Hardest commercially available material



Hexoloy® Custom Made Products

- Vessel linings, sparger tubes
- Nozzles, let down valves
- Mechanical seal faces & bearings
- Heat exchanger tubes
- Custom components & special shapes

SCD.sales@saint-gobain.com
716-278-6233


SAINT-GOBAIN

Circle 30 on p. 190 or go to adlinks.chemengonline.com/56204-30

Cast irons, high-silicon

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Clearfield Machine Co., Clearfield, PA
OR Co 0908 002, New York

Ductile iron

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Clearfield Machine Co., Clearfield, PA
OR Co 0908 002, New York

Wrought iron

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

OR Co 0908 002, New York

LUBRICANTS

Lubricants, engine oil

Petron Plus Global, Inc., Hutchinson, Kansas

Lubricants, greases

CPI Wirecloth & Screens Inc, Pearland, TX

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4- CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvci.com; web site: www.cortecvci.com)

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Lubricants, industrial oils

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Petron Plus Global, Inc., Hutchinson, Kansas

Lubricants, process oils

Petron Plus Global, Inc., Hutchinson, Kansas

MATERIALS FOR BUILDINGS & BUILDING CONSTRUCTION

Decking

Bustin Industrial Products, East Stroudsburg, PA
Creative Pultrusions, Inc., Alum Bank, PA

Film, gas barrier

OR Co 0908 002, New York

Flooring, acid resistant

Bustin Industrial Products, East Stroudsburg, PA
Cass Polymers, Inc., Oklahoma City, OK
Dudick Inc., Streetsboro, OH
ITW Polymers Adhesives, North America, Danvers, MA
Key Resin Company, Ohio
Sauereisen, Pittsburgh, PA

Flooring, aluminum

Bustin Industrial Products, East Stroudsburg, PA
OR Co 0908 002, New York

Flooring, asphalt

OR Co 0908 002, New York

Flooring, brick

OR Co 0908 002, New York

Flooring, carbon

Dudick Inc., Streetsboro, OH
OR Co 0908 002, New York

Flooring, fiberglass

Creative Pultrusions, Inc., Alum Bank, PA

Flooring, iron & steel

Bustin Industrial Products, East Stroudsburg, PA

OR Co 0908 002, New York

Flooring, metal grid

Bustin Industrial Products, East Stroudsburg, PA

Flooring, skid resistant

Bustin Industrial Products, East Stroudsburg, PA
Cass Polymers, Inc., Oklahoma City, OK
ITW Polymers Adhesives, North America, Danvers, MA
Sauereisen, Pittsburgh, PA

Wall materials, chemically resistant

Cass Polymers, Inc., Oklahoma City, OK
Dudick Inc., Streetsboro, OH
Milamar Coatings L.L.C., Oklahoma City, OK
Sauereisen, Pittsburgh, PA

METALS & ALLOYS, OTHER NONFERROUS

Beryllium & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Chromium & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

KAIVAN ENGINEERS

Milward Alloys, Lockport, NY

Cobalt alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Milward Alloys, Lockport, NY
VDM Metals GmbH, Werdohl, NRW
Wall Colmonoy Corporation, Madison Heights, MI

Gold & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Indium & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Milward Alloys, Lockport, NY

Lead & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

KAIVAN ENGINEERS

Milward Alloys, Lockport, NY

Magnesium

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Molybdenum & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Regal Industries, Inc., Painesville, OH

Niobium

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Palladium & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Platinum & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Selenium & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Silver & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

KAIVAN ENGINEERS

Tantalum & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Tellurium

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Thallium

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Tin & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

KAIVAN ENGINEERS

Titanium & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

KAIVAN ENGINEERS

Milward Alloys, Lockport, NY
VDM Metals GmbH, Werdohl, NRW

Tungsten & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customer-service@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Regal Industries, Inc., Painesville, OH
Scenic Precise Element Inc., Kaohsiung City

Zinc & alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

KAIVAN ENGINEERS

KDF Fluid Treatment, Inc., Three Rivers, MI
Milward Alloys, Lockport, NY

Zirconium

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

VDM Metals GmbH, Werdohl, NRW

NICKEL & NICKEL ALLOYS

Nickel

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Corrosion Materials, Baker, LA

TW Metals, Exton, PA

United Performance Metals, Houston, TX

VDM Metals GmbH, Werdohl, NRW

Nickel alloys

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Corrosion Materials, Baker, LA

Regal Industries, Inc., Painesville, OH

SANDVIK MATERIALS TECHNOLOGY, TUBULAR

PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

TW Metals, Exton, PA

United Performance Metals, Houston, TX

VDM Metals GmbH, Werdohl, NRW

Wall Colmonoy Corporation, Madison Heights, MI

Nickel aluminide

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

PLASTICS MATERIALS

Acrylic copolymers

Hexion Inc., Epoxy, Phenolic & Coating Resins Division, Columbus, Ohio

THE LUBRIZOL CORPORATION, 9911 Brecksville Rd., Cleveland, Ohio 44141-3247 (888-234-2436; 216-447-7397; FAX: 216-447-5750; web site: www.lubrizol.com)

See our ad on page 97

Acrylics

Hexion Inc., Epoxy, Phenolic & Coating Resins Division, Columbus, Ohio

IMPSCO, Inc., East Providence, RI

Cellulose acetate butyrate

Eastman Chemical Co. Inc., Kingsport, Tennessee

Epoxies

Cass Polymers, Inc., Oklahoma City, OK

Dudick Inc., Streetsboro, OH

Dymax Corp., Torrington, CT

Epoxies, Etc., Rhode Island

Milamar Coatings L.L.C., Oklahoma City, OK

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Fiberglass-epoxy

Dudick Inc., Streetsboro, OH

Fiberglass-polyester

Creative Pultrusions, Inc., Alum Bank, PA

Dudick Inc., Streetsboro, OH

Fluorocarbons

Arkema Inc., King of Prussia, Pennsylvania
Compressor Products International, Stafford, TX

Foams, plastic

Covestro LLC, Pittsburgh, Pennsylvania

Nylon

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Plastics, other

Associated Bag Company, Milwaukee, WI

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)

Covestro LLC, Pittsburgh, Pennsylvania

Creative Pultrusions, Inc., Alum Bank, PA

Eastman Chemical Co. Inc., Kingsport, Tennessee

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

THE LUBRIZOL CORPORATION, 9911 Brecksville Rd., Cleveland, Ohio 44141-3247 (888-234-2436; 216-447-7397; FAX: 216-447-5750; web site: www.lubrizol.com)

See our ad on page 97

Polycarbonates

Covestro LLC, Pittsburgh, Pennsylvania

Polyesters

Dudick Inc., Streetsboro, OH

Eastman Chemical Co. Inc., Kingsport, Tennessee

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Polyethylenes

Associated Bag Company, Milwaukee, WI

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)

Eastman Chemical Co. Inc., Kingsport, Tennessee

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Polypropylenes

Associated Bag Company, Milwaukee, WI

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Polytetrafluoroethylene

Compressor Products International, Stafford, TX

W.L. Gore & Associates, Sealant Technologies, 201 Airport Road, P.O. Box 1488, Elkton, Maryland 21921 (410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

Silicones

Epoxies, Etc., Rhode Island

Thermoplastic elastomers

Covestro LLC, Pittsburgh, Pennsylvania

PROTECTIVE COATINGS & LININGS

Adhesives

Dymax Corp., Torrington, CT

Epoxies, Etc., Rhode Island

Hexion Inc., Epoxy, Phenolic & Coating Resins Division, Columbus, Ohio

ITW Polymers Adhesives, North America, Danvers, MA

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Synthetic Surfaces Inc., Scotch Plains, NJ

Cargo Protection

Nier Systems Inc, Boca Raton, Florida

Coatings, PVC

Synthetic Surfaces Inc., Scotch Plains, NJ

Coatings, acrylic

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)

Dymax Corp., Torrington, CT

Hexion Inc., Epoxy, Phenolic & Coating Resins Division, Columbus, Ohio

Polyguard Products, Inc., Ennis, TX

THE LUBRIZOL CORPORATION, 9911 Brecksville Rd., Cleveland, Ohio 44141-3247 (888-234-2436; 216-447-7397; FAX: 216-447-5750; web site: www.lubrizol.com)

See our ad on page 97

Coatings, ceramic

ITW Polymers Adhesives, North America, Danvers, MA

3M Technical Ceramics, Kempton,

P-Ker Engineering, Waterport, NY

Coatings, diffusion

Wall Colmonoy Corporation, Madison Heights, MI

Coatings, epoxy

Cass Polymers, Inc., Oklahoma City, OK

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)

Diamond Refractory Services, Texas

Dudick Inc., Streetsboro, OH

Epoxies, Etc., Rhode Island

ITW Polymers Adhesives, North America, Danvers, MA

Milwesco Filter Resources, Inc., Winchester, VA

Milamar Coatings L.L.C., Oklahoma City, OK

Sauereisen, Pittsburgh, PA

Synthetic Surfaces Inc., Scotch Plains, NJ

Coatings, fluoropolymer

Arkema Inc., King of Prussia, Pennsylvania

Coatings, metallic

Wall Colmonoy Corporation, Madison Heights, MI

Coatings, nonskid

Cass Polymers, Inc., Oklahoma City, OK

Coatings, nonslip

Cass Polymers, Inc., Oklahoma City, OK

Coatings, nonstick

Fr. Jacob Soehne GmbH & Co. KG, Porta Westfalica, NRW

Coatings, plastic

Arkema Inc., King of Prussia, Pennsylvania

Dudick Inc., Streetsboro, OH

Coatings, powder

Hexion Inc., Epoxy, Phenolic & Coating Resins Division, Columbus, Ohio

Coatings, refractory

P-Ker Engineering, Waterport, NY

Sauereisen, Pittsburgh, PA

Coatings, silicate

Sauereisen, Pittsburgh, PA

Coatings, urethane

Cass Polymers, Inc., Oklahoma City, OK

Covestro LLC, Pittsburgh, Pennsylvania

Dymax Corp., Torrington, CT

ITW Polymers Adhesives, North America, Danvers, MA

Milamar Coatings L.L.C., Oklahoma City, OK

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus

Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

THE LUBRIZOL CORPORATION, 9911 Brecksville Rd., Cleveland, Ohio 44141-3247 (888-234-2436; 216-447-7397; FAX: 216-447-5750; web site: www.lubrizol.com)

See our ad on page 97

Coatings, vinyl ester

Sauereisen, Pittsburgh, PA

Freight & Cargo Protection

Nier Systems Inc, Boca Raton, Florida

Linings, basalt

Abresist Kalenborn Corporation, Urbana, IN

Linings, cements & mortars

Abresist Kalenborn Corporation, Urbana, IN

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4- CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)

Dudick Inc., Streetsboro, OH

Sauereisen, Pittsburgh, PA

Linings, ceramic

Abresist Kalenborn Corporation, Urbana, IN

Koch Knight, LLC, East Canton, Ohio

SAINT-GOBAIN CERAMICS/STRUCTURAL CERAMICS, 23 Acheson Dr., Niagara Falls, New York 14303 (716-278-6233; FAX: 716-278-2373; e-mail: scd.sales@saint-gobain.com; web site: www.hexoloy.com)

See our ad on page 167

Linings, chlorosulfonated polyethylene

Watersaver Co., a division of CDI, Commerce City, CO

Linings, epoxy

Cass Polymers, Inc., Oklahoma City, OK

Dudick Inc., Streetsboro, OH

Sauereisen, Pittsburgh, PA

Linings, fluoroplastic

Koch Knight, LLC, East Canton, Ohio

Linings, glass

Dueker GmbH & Co. KGaA, Laufach

Linings, glass-reinforced plastic

Dudick Inc., Streetsboro, OH

Linings, polyethylene

Associated Bag Company, Milwaukee, WI

Nier Systems Inc, Boca Raton, Florida

Linings, refractory

Sauereisen, Pittsburgh, PA

ZIRCAR Refractory Composites, Inc., Florida, NY

Linings, urethane

Covestro LLC, Pittsburgh, Pennsylvania

Sauereisen, Pittsburgh, PA

Linings, vinyl

Watersaver Co., a division of CDI, Commerce City, CO

Paints

Cass Polymers, Inc., Oklahoma City, OK

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4- CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)

Milamar Coatings L.L.C., Oklahoma City, OK

Sealants

Dymax Corp., Torrington, CT

IMPCCO, Inc., East Providence, RI

ITW Polymers Adhesives, North America, Danvers, MA

W.L. Gore & Associates, Sealant Technologies, 201

Kirch Road, P.O. Box 1488, Elkton, Maryland 21921

(410-392-3200; FAX: 410-392-4817; web site: www.gore.com/sealants)

REFRACTORY MATERIALS

Castables

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Firebrick

Koch Knight, LLC, East Canton, Ohio

Foams, refractory

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Refractories

Advance Boiler & Tank Co., West Allis, WI

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Christy Catalytics LLC, St. Louis, MO

ZIRCAR Refractory Composites, Inc., Florida, NY

Refractories, gunning

Diamond Refractory Services, Texas

Sauereisen, Pittsburgh, PA

Refractory mortars & cements

Advance Boiler & Tank Co., West Allis, WI

Koch Knight, LLC, East Canton, Ohio

Sauereisen, Pittsburgh, PA

RUBBER & RUBBERLIKE MATERIALS

Rubber, acrylic

Mallard Creek Polymers, Inc., Charlotte, NC

Rubber, butyl

LANXESS

Energizing Chemistry

LANXESS Corporation, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Rubber, chlorinated polyethylene

Cachat, M. F., Co., Headquarters, Lakewood, OH

Rubber, chlorosulfonated polyethylene

Cachat, M. F., Co., Headquarters, Lakewood, OH

Rubber, ethylene propylene

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Rubber, fluoroelastomers

Apple Rubber Products, Lancaster, NY

Cachat, M. F., Co., Headquarters, Lakewood, OH

Rubber, neoprene

Apple Rubber Products, Lancaster, NY

Conveyor Components Co., Material Control, Inc., Crosswell, MI

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Rubber, nitrile

Apple Rubber Products, Lancaster, NY

Cachat, M. F., Co., Headquarters, Lakewood, OH

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Mallard Creek Polymers, Inc., Charlotte, NC

Rubber, polybutadiene

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Mallard Creek Polymers, Inc., Charlotte, NC

Rubber, silicone

Momentive Performance Materials Inc., Waterford, New York

Rubber, styrene butadiene

Apple Rubber Products, Lancaster, NY

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Mallard Creek Polymers, Inc., Charlotte, NC

Rubber, synthetic, other

Cachat, M. F., Co., Headquarters, Lakewood, OH

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

THE LUBRIZOL CORPORATION, 9911 Brecksville Rd., Cleveland, Ohio 44141-3247 (888-234-2436; 216-447-7397; FAX: 216-447-5750; web site: www.lubrizol.com)

See our ad on page 97

Rubber, urethane

ITW Polymers Adhesives, North America, Danvers, MA

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

THE LUBRIZOL CORPORATION, 9911 Brecksville Rd., Cleveland, Ohio 44141-3247 (888-234-2436; 216-447-7397; FAX: 216-447-5750; web site: www.lubrizol.com)

See our ad on page 97

STAINLESS STEELS

Stainless steels, AISI 200 series

KAIVAN ENGINEERS

Stainless steels, AISI 300 series

Arch City Steel, Fenton, Missouri

KAIVAN ENGINEERS

SANDVIK MATERIALS TECHNOLOGY, TUBULAR

PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

United Performance Metals, Houston, TX

Stainless steels, AISI 400 series

KAIVAN ENGINEERS

SANDVIK MATERIALS TECHNOLOGY, TUBULAR

PRODUCTS, P.O. Box 1220, Scranton, Pennsylvania 18501 (800-755-8823; 570-585-7500; FAX: 570-585-7642; web site: www.smt.sandvik.com)

See our ad on page 76

Stainless steels, cast

KAIVAN ENGINEERS

STEELS

Carbon steels

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

High alloy steels

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Low alloy steels

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

Medium alloy steels

AMERICAN ELEMENTS, Los Angeles, California 90024 (310-208-0551; FAX: 310-208-0351; e-mail: customerservice@americanelements.com; web site: www.americanelements.com)

See our ad on page 60

7 PLANT MAINTENANCE

- 171** **Cleaning equipment & services**
- 172** **Equipment repair & rebuilding**
- 172** **Fire protection equipment**
- 172** **Maintenance tools & equipment & replacement parts**
- 172** **Noise & vibration suppression equipment**
- 173** **Safety equipment & systems**

CLEANING EQUIPMENT & SERVICES

Acid mist/Gas cleaning

BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)

Cleaners & refacers, tube

Clean Harbors, Norwell, MA
Goodway Technologies Corp., Stamford, CT

Cleaning chemicals & services

Clean Harbors, Norwell, MA

CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4- CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvc.com; web site: www.cortecvc.com)

MILLER-STEPHENSON CHEMICAL CO., INC., 55

Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Spartan Chemical Services Inc., Jersey City, NJ

Cleaning equipment, blast

Hammelmann Corp., Miamisburg, OH
URACA GmbH & Co. KG, Bad Urach,
Veolia Environmental Services, Chicago, Illinois

Cleaning equipment, chemical

Advance, Plymouth, MN
Alfa Laval Tank Equipment, Exton, Pennsylvania
Hydro-Thermal Corp., Waukesha, WI
NexGen Enviro Systems Inc., Lindenhurst, NY
Petron Plus Global, Inc., Hutchinson, Kansas
Singleton Corp., Cleveland, OH
Veolia Environmental Services, Chicago, Illinois

Cleaning equipment, high-pressure liquid

Advance, Plymouth, MN
Alfa Laval Tank Equipment, Exton, Pennsylvania
Cat Pumps, Minneapolis, MN
Goodway Technologies Corp., Stamford, CT
Hammelmann Corp., Miamisburg, OH
Hannay Reels Inc., Westerlo, NY
INOX-TECH INC., Ste. Catherine
Spraying Systems Co., Wheaton, IL
URACA GmbH & Co. KG, Bad Urach,
Veolia Environmental Services, Chicago, Illinois
WOMA Corp., Edison, NJ

Cleaning equipment, mechanical

Advance, Plymouth, MN
Goodway Technologies Corp., Stamford, CT

Cleaning equipment, pharmaceutical

Bioengineering AG, Wald,
Bioengineering Inc., Somerville, MA

GAMAJET, PART OF THE ALFA LAVAL GROUP, 604 Jeffers Circle, Pennsylvania 19341 (e-mail: jessica.letscher@alfalaval.com)

Hydro-Thermal Corp., Waukesha, WI
Pick Heaters Inc., West Bend, WI

Cleaning equipment, steam

Alfa Laval Tank Equipment, Exton, Pennsylvania
Hydro-Thermal Corp., Waukesha, WI
Pick Heaters Inc., West Bend, WI

Cleaning equipment, tank cleaning

Alfa Laval Tank Equipment, Exton, Pennsylvania
Bioengineering Inc., Somerville, MA
Butterworth Inc., Houston, TX
Hammelmann Corp., Miamisburg, OH
Hydro-Thermal Corp., Waukesha, WI
Pulsair Systems, Inc., Bellevue, Washington
Spraying Systems Co., Wheaton, IL
URACA GmbH & Co. KG, Bad Urach,
Veolia Environmental Services, Chicago, Illinois
WOMA Corp., Edison, NJ

Cleaning parts & accessories

Alfa Laval Tank Equipment, Exton, Pennsylvania
Butterworth Inc., Houston, TX
Hammelmann Corp., Miamisburg, OH
NexGen Enviro Systems Inc., Lindenhurst, NY

Sweepers

Advance, Plymouth, MN
Industrial Magnetics, Inc., Boyne City, Michigan

Vacuum cleaning systems

Clean Harbors, Norwell, MA
Goodway Technologies Corp., Stamford, CT
Vector Technologies Ltd., Milwaukee, WI
Veolia Environmental Services, Chicago, Illinois

Washers

Alfa Laval Tank Equipment, Exton, Pennsylvania
Goodway Technologies Corp., Stamford, CT
NexGen Enviro Systems Inc., Lindsenhurst, NY
Progressive Recovery Inc., Duplo, IL

EQUIPMENT REPAIR & REBUILDING

Pipeline rehabilitation processes

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

Pressure vessel repair

Advance Boiler & Tank Co., West Allis, WI
BORSIG GmbH, Berlin
Diamond Refractory Services, Texas
HydroPro Inc., Engineering & Manufacturing, Bourbon
Sulzer Chemtech USA, Inc., Tulsa, OK

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

Pump repair

Wall Colmonoy Corporation, Madison Heights, MI

Valve repair

BORSIG GmbH, Berlin
HOERBIGER Kompressortechnik Holding GmbH, Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0; FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)
TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

Wall Colmonoy Corporation, Madison Heights, MI

Weld heat-treating

Wall Colmonoy Corporation, Madison Heights, MI

FIRE PROTECTION EQUIPMENT

Deluge systems

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Fire alarm systems

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Fire deflection systems

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

General Monitors, Lake Forest, CA
Sensor Electronics Corp., Minneapolis, MN

Fire extinguishers, portable

Red Dog Services LLC, Allen, TX
Sensor Electronics Corp., Minneapolis, MN
Spill Containment Direct, Buffalo, MN

Fire extinguishing systems, carbon dioxide

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Sensor Electronics Corp., Minneapolis, MN

Fire extinguishing systems, dry chemical

Sensor Electronics Corp., Minneapolis, MN

Fire extinguishing systems, foam

Red Dog Services LLC, Allen, TX
Sensor Electronics Corp., Minneapolis, MN

Fire extinguishing systems, halogenated hydrocarbon

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Sensor Electronics Corp., Minneapolis, MN

Fire pumps

Schutte & Koerting, Trevose, PA
Schutte & Koerting, Trevose, PA

Hose reels

Hannay Reels Inc., Westerlo, NY

Smoke detection systems

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Spill response kits

Red Dog Services LLC, Allen, TX

Sprinkler systems

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

MAINTENANCE TOOLS & EQUIPMENT & REPLACEMENT PARTS

Alloys, brazing

Wall Colmonoy Corporation, Madison Heights, MI

Borescopes

QUEST INTEGRITY, 19823 58th Place South, Washington 98032 (e-mail: c.levy@questintegrity.com)

Expanders, tube

HydroPro Inc., Engineering & Manufacturing, Bourbon
USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Leak sealing service

HydroPro Inc., Engineering & Manufacturing, Bourbon
TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

Lubricating equipment

Hannay Reels Inc., Westerlo, NY
LA-MAN Corp., Mazeppa, MN

Machinery-alignment equipment

Elos Fixtur laser AB, Molndal
LUDECA, INC., Doral, FL

Patching compounds

ITW Polymers Adhesives, North America, Danvers, MA

Plant maintenance services

Diamond Refractory Services, Texas
Elos Fixtur laser AB, Molndal
PRyUTECHNIK Dieter Busch AG, Ismaning,
QUEST INTEGRITY, 19823 58th Place South, Washington 98032 (e-mail: c.levy@questintegrity.com)
REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)
See our ad on page 17

SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

Rods, welding

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Shaft-alignment equipment

Elos Fixtur laser AB, Molndal
LUDECA, INC., Doral, FL
PRyUTECHNIK Dieter Busch AG, Ismaning,

Spray equipment, thermal

Wall Colmonoy Corporation, Madison Heights, MI

Stud tensioners, hydraulic

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

Testing equipment, corrosion

QUEST INTEGRITY, 19823 58th Place South, Washington 98032 (e-mail: c.levy@questintegrity.com)
Singleton Corp., Cleveland, OH

Testing equipment, high pressure

Beamex, Inc., Marietta, GA
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
See our ad on page 98

Testing equipment, nondestructive

ATS RhoSystems, Cannon Instrument Company, Borden-town, NJ
PRyUTECHNIK Dieter Busch AG, Ismaning,
QUEST INTEGRITY, 19823 58th Place South, Washington 98032 (e-mail: c.levy@questintegrity.com)
Raytek Corp., Santa Cruz, CA

Tools & equipment, other

BERNDORF BAND GMBH, Leobersdorferstr. 26, Berndorf, 2560 (43-2672-800-0; FAX: 43-2672-84176; e-mail: band@berndorf.at; web site: www.berndorf-band.at)
HydroPro Inc., Engineering & Manufacturing, Bourbon
REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)
See our ad on page 17

Tools, hand

CEJN Industrial Corp., Gurnee, Illinois
Leister Technologies AG, Kaegiswil
USA INDUSTRIES, INC., 302 State Street, S. Houston, Texas 77587 (800-456-8721; 713-941-3797; 713-941-3797; FAX: 713-941-1086; e-mail: info@usaindustries.com; web site: www.usaindustries.com)

Welding equipment

Hannay Reels Inc., Westerlo, NY
Leister Technologies AG, Kaegiswil

NOISE & VIBRATION SUPPRESSION EQUIPMENT

Absorbers, vibration

Isotech, Inc, Hatfield, PA
McGill AirSilence LLC, Columbus, OH

Analyzers, vibration

Isotech, Inc, Hatfield, PA
LUDECA, INC., Doral, FL
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)
See our ad on page 98

Insulation, acoustical

Isotech, Inc, Hatfield, PA

Louvers, noise control

McGill AirSilence LLC, Columbus, OH

Noise enclosures & barriers

EDWARDS US HEADQUARTERS, Sanborn, NY
Isotech, Inc., Hatfield, PA
McGill AirSilence LLC, Columbus, OH

Silencers, exhaust

CU SERVICES LLC, Elk Grove, IL
EDWARDS US HEADQUARTERS, Sanborn, NY
McGill AirSilence LLC, Columbus, OH
Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Silencers, inline

EDWARDS US HEADQUARTERS, Sanborn, NY
McGill AirSilence LLC, Columbus, OH

Silencers, intake

EDWARDS US HEADQUARTERS, Sanborn, NY
McGill AirSilence LLC, Columbus, OH

Testing instruments, vibration

LUDECA, INC., Doral, FL
PRÜFTECHNIK Dieter Busch AG, Ismaning,
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte,
North Carolina 28273 (800-858-8727; 704-597-9070;
FAX: 704-583-1610; web site: www.tlv.com)
See our ad on page 98
Thermotron, Holland, MI

SAFETY EQUIPMENT & SYSTEMS

Air purifiers

SPX Flow Technology, Ocala, FL

Antiskid materials

Bustin Industrial Products, East Stroudsburg, PA

Aprons

Associated Bag Company, Milwaukee, WI

Arresters, flame deflagration or detonation

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Oseco, Broken Arrow, OK

Arresters, flame, tank vent, inline

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Oseco, Broken Arrow, OK

Arresters, surge

Lightning Eliminators & Consultants, Inc., Boulder, CO

Blowout doors & panels

BS & B Safety Systems, Inc., Tulsa, OK

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Henderson Industrial Specialties, Waterdown,

Oseco, Broken Arrow, OK

Climbing safety equipment

Sur-Loc Inc., Fremont, IN

Clothing, chemical resistant

Associated Bag Company, Milwaukee, WI

Containers, safety

Associated Bag Company, Milwaukee, WI
Qosina, Edgewood, NY

Coveralls

Qosina, Edgewood, NY

Emergency shutdown systems

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
Process Systems Engineering LLC, Industrial Automation
and Process Safety Engineering, Westfield, New Jersey
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187
(++49(0)721/595-4706; web site: www.siemens.com)

Explosion Testing

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Explosion isolation

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Henderson Industrial Specialties, Waterdown,

Oseco, Broken Arrow, OK

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21,
Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714;
e-mail: sales@rembe.de; web site: www.rembe.com)

See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC
28217 (704.716.7022; FAX: 704.716.7025; e-mail:
info@rembre.us; web site: www.rembe.us)

Explosion suppression systems

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Henderson Industrial Specialties, Waterdown,

Explosion vents

BS & B Safety Systems, Inc., Tulsa, OK

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

HOERBIGER Kompressortechnik Holding GmbH,
Donau-City-Strasse 1, Vienna A-1220 (+43 1 22 440-0;
FAX: +43 1 22 440 990; e-mail: info-hkth@hoerbiger.com; web site: www.hoerbiger.com)

Henderson Industrial Specialties, Waterdown,

Oseco, Broken Arrow, OK

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21,
Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714;
e-mail: sales@rembe.de; web site: www.rembe.com)

See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC
28217 (704.716.7022; FAX: 704.716.7025; e-mail:
info@rembre.us; web site: www.rembe.us)

Scientific Dust Collectors, Alsip, IL

Face shields

Associated Bag Company, Milwaukee, WI

Glove boxes

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

PSL USA, Boise, ID

Powder Systems Ltd, Liverpool

Gloves

Associated Bag Company, Milwaukee, WI
Qosina, Edgewood, NY

Harnesses

Sur-Loc Inc., Fremont, IN

Marking & labeling systems

Associated Bag Company, Milwaukee, WI

K-Sun Corporation, Somerset, WI

Process Systems Engineering LLC, Industrial Automation
and Process Safety Engineering, Westfield, New Jersey

Nozzles, fire fog

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield,
Massachusetts 01301 (800-235-0049; 413-772-0846;
FAX: 413-772-6729; e-mail: sales@bete.com; web
site: www.bete.com)

Spraying Systems Co., Wheaton, IL

Pipe markers

K-Sun Corporation, Somerset, WI

Pressure Relief

BS & B Safety Systems, Inc., Tulsa, OK

Purge systems

Pepperl + Fuchs GmbH, Lillenthalstrasse 200,
Mannheim 68307 (0621-776-0; FAX: 0621-776-1000;
e-mail: info@de.pepperl-fuchs.com; web site: www.
pepperl-fuchs.com)

Railroad safety devices

Oseco, Broken Arrow, OK

Trans Environmental Systems, Inc., Charlottesville, Virginia

Rupture discs

BS & B Safety Systems, Inc., Tulsa, OK

Donadon SDD Srl, Via Franceschelli, 7, Corbetta, 20011
(+390290111001; +390290112210; e-mail: donadonsdd@
donadonsdd.com; web site: www.donadonsdd.com)
FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Oseco, Broken Arrow, OK

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21,
Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714;
e-mail: sales@rembe.de; web site: www.rembe.com)

See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC
28217 (704.716.7022; FAX: 704.716.7025; e-mail:
info@rembre.us; web site: www.rembe.us)

Rupture panels

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Oseco, Broken Arrow, OK

REMBE GMBH, SAFETY+CONTROL, Gallbergweg 21,
Brilon, 59929 (49-2961-7405-0; FAX: 49-2961-50-714;
e-mail: sales@rembe.de; web site: www.rembe.com)

See our ad on page 19

REMBE, INC., 3809 Beam Road Ste K, Charlotte, NC
28217 (704.716.7022; FAX: 704.716.7025; e-mail:
info@rembre.us; web site: www.rembe.us)

Safety audits

Dakota Software Corp., Cleveland, OH

Process Systems Engineering LLC, Industrial Automation
and Process Safety Engineering, Westfield, New Jersey

Shoes, safety

Winter Walking (a JORDAN DAVID company), Horsham,
PA

Showers, emergency

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Hughes Safety Showers North America Inc.

Sinks, eye or face emergency

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Hughes Safety Showers North America Inc.

Spill Containment

Trans Environmental Systems, Inc., Charlottesville, Virginia

Static detection & elimination systems

Newson Gale Ltd, Nottingham

Storage cabinets

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Spill Containment Direct, Buffalo, MN

Testing equipment, dust

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

Testing equipment, emergency valves

Beames, Inc., Marietta, GA

Testing equipment, gases & vapors

American Gas & Chemical Co Ltd, New Jersey
Delphian Corp., Northvale, NJ

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)

RKI Instruments, Inc., Union City, CA

Valve & flange covers

Oseco, Broken Arrow, OK

Vented Enclosures

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

8

DESIGN, ENGINEERING, & CONSTRUCTION

175 Engineering services

177 Training

ENGINEERING SERVICES

Arbitration, engineering

Krighthawk Engineering, Houston, TX
TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

Construction

Duke's Root Control, Inc., New York
M+W Central Europe GmbH

Construction Management

Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com) Consultants, ISO compliance
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Consultants, Welding

McWane and Associates, San Jose, California

Consultants, corrosion protection

Applus RTD USA, Houston, TX
Diamond Refractory Services, Texas
Krighthawk Engineering, Houston, TX

Consultants, double containment systems design & installation

M+W Central Europe GmbH

Consultants, engineering

AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
Advanced GeoServices Corp., West Chester, PA
Advanced Industrial Technology Corp., Paramus, NJ
Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main

Airflow Sciences Corporation, Livonia, MI

Applus RTD USA, Houston, TX
Bayer Technology Services GmbH, Leverkusen
CAI Catalysts, Gwynedd Square, PA
Clean Air Engineering, Palatine, IL
Dec Group - Dietrich Engineering Consultants sa, Ecublens

Dematic Corp., Grand Rapids, MI

E-Vac Technologies, LLC, McMurray, PA

GEA Engineering, P.C., Nanuet, NY

Gekko Engineering, Carson, CA

Harrop Industries, Inc., Columbus, OH

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

Johnson Matthey Davy Technologies Ltd., London,

Krighthawk Engineering, Houston, TX

Lightning Eliminators & Consultants, Inc., Boulder, CO

Musco Engineering Associates, West Haven, CT

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

PENTA Engineering, P.A., Charlotte, NC

ProSim SA, LABEGE

ProSys, Inc., Baton Rouge, Louisiana

Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, Westfield, New Jersey

Process Systems Enterprise Limited, London

RAS Process Equipment Inc., Robbinsville, NJ

REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)

See our ad on page 17

River Consulting, Pittsburgh, Pennsylvania

Sulzer Chemtech USA, Inc., Tulsa, OK

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

TowerScan, Sarnia,

TowerScan, Sarnia,

TowerScan, Port Huron, MI

Wall Colmonoy Corporation, Madison Heights, MI

Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)

Consultants, high purity process design

PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Consultants, materials

Krighthawk Engineering, Houston, TX
McWane and Associates, San Jose, California
Toll Blender Network, Connecticut

Consultants, safety & health

Conversion Technology, Inc., Norcross, GA
HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, Westfield, New Jersey
REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)

See our ad on page 17

Consultants, water treatment

CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)

Filtration & Membrane Technology, Inc., Houston, TX
GEA Engineering, P.C., Nanuet, NY

PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

River Consulting, Pittsburgh, Pennsylvania
United Manufacturing International 2000, Red Bluff, CA

Contract manufacturing systems

Toll Blender Network, Connecticut

Custom processing

Harrop Industries, Inc., Columbus, OH
Innovative Processing Solutions, Aurora, IN
Krighthawk Engineering, Houston, TX
Particle Reduction Service, Elk Grove Village, IL
Toll Blender Network, Connecticut

Database services

DECHEMA e.V., Frankfurt am Main

Demolition

Midwest Steel Company Inc, Houston, Texas

Engineering, Welding

McWane and Associates, San Jose, California

Engineering, biochemical & biotech

Bayer Technology Services GmbH, Leverkusen
M+W Central Europe GmbH
Sias, New Castle, DE
Xiril AG, Hombrechtikon

Engineering: blast resistant modules

REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)

See our ad on page 17

Engineering: clean rooms

Bayer Technology Services GmbH, Leverkusen

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

M+W Central Europe GmbH

Engineering: construction & field erection

De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)

Harrop Industries, Inc., Columbus, OH

Koch Knight, LLC, East Canton, Ohio

Martin Engineering, Neponset, IL

Musco Engineering Associates, West Haven, CT

NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Sallierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Sulzer Chemtech USA, Inc., Tulsa, OK

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Engineering: cryogenic equipment

LAUDA DR. R. WOBSE GMBH & CO. KG, Pfarrstrasse 41/43, Lauda-Koenigshofen, 97922 (+49 (0)9343 503-0; +1856 7647300; FAX: +49 (0)9343 503-222; e-mail: info@lauda.de; web site: www.lauda.de)
NEUHAUS NEOTEC Maschinen- und Anlagenbau GmbH, Dieselstrasse 5-9 D-21465 Reinbek (+49-40-72771-500; FAX: +49-40-72771-550; e-mail: sales@neuhaus-neotec.de; web site: www.neuhaus-neotec.de)
V2 Flow Controls, Burr Ridge, Illinois

Engineering: equipment inspection & expediting

AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
Applus RTD USA, Houston, TX
Bayer Technology Services GmbH, Leverkusen
FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com; web site: www.fike.com)
Krighthawk Engineering, Houston, TX

Engineering: facilities planning

Applus RTD USA, Houston, TX
Gekko Engineering, Carson, CA
Lyntec, Inc., Lakewood, CO
M+W Central Europe GmbH
Musco Engineering Associates, West Haven, CT
PENTA Engineering, P.A., Charlotte, NC
REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)
See our ad on page 17

River Consulting, Pittsburgh, Pennsylvania
ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)
Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)

Engineering: instrumentation & control systems

Dr. Thiedig GmbH & Co KG, Berlin
Dresser-Rand, Corporate Headquarters, Houston, TX
Electronic Development Labs, Danville, VA
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Flottweg SE, Vilsbiburg
HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
Harrop Industries, Inc., Columbus, OH
Lectrus, Chattanooga, TN
Lyntec, Inc., Lakewood, CO
Musco Engineering Associates, West Haven, CT
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

PENTA Engineering, P.A., Charlotte, NC
Pepperl + Fuchs GmbH, Lilienthalstrasse 200, Mannheim 68307 (0621-776-0; FAX: 0621-776-1000; e-mail: info@de.pepperl-fuchs.com; web site: www.pepperl-fuchs.com)

Polytec, Inc., Process Analytics, Hopkinton
Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, Westfield, New Jersey
River Consulting, Pittsburgh, Pennsylvania
Rockwell Automation, Inc., Milwaukee, WI
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187 (+49(0)721/595-4706; web site: www.siemens.com)

Swagelok Co., Solon, OH
The Industrial Controls Company, Inc., Thermotron, Holland, MI
Zeton Inc., Burlington, tecUSA, Plainview, NY

Engineering: modular process systems

AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
Bayer Technology Services GmbH, Leverkusen
Cobey, Buffalo, New York
EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: + 49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

GEA Engineering, P.C., Nanuet, NY
Gekko Engineering, Carson, CA
INOX-TECH INC., Ste. Catherine
Innovative Processing Solutions, Aurora, IN
Johnson Matthey Davy Technologies Ltd., London,
Lyntec, Inc., Lakewood, CO

M+W Central Europe GmbH
 Pope Scientific, Inc., Saukville, Wisconsin
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)
Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)
 Zeton Inc., Burlington,

Engineering: packaged pilot plants

Bayer Technology Services GmbH, Leverkusen
 Biazzi SA, Chailly/Montreux
CALORIS ENGINEERING, 8649 Commerce Drive, Easton, Maryland 21601 (410-822-6900; FAX: 410-822-9006; e-mail: info@caloris.com; web site: www.caloris.com)
 HydroTec Systems Co., Inc., Tiskilwa, IL
 Johnson Matthey Davy Technologies Ltd., London,
 Johnson Matthey Davy Technologies Ltd., London
 Lyntek, Inc., Lakewood, CO
 Pope Scientific, Inc., Saukville, Wisconsin

PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)
 Sulzer Chemtech USA, Inc., Tulsa, OK
 Zeton Inc., Burlington,

Engineering: pilot plants

Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main
 GEA Engineering, P.C., Nanuet, NY
 Harrop Industries, Inc., Columbus, OH
 Johnson Matthey Davy Technologies Ltd., London,
 Linde AG, Engineering Division, Pullach
 Pope Scientific, Inc., Saukville, Wisconsin
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)
 Zeton Inc., Burlington,

Engineering: plant design

ABZ, INC., 4451 Brookfield Corp. Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com; web site: www.abzinc.com)

AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
 Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main
 Alexanderwerk AG, Remscheid
 Bayer Technology Services GmbH, Leverkusen
 Biazzi SA, Chailly/Montreux
 Chematur Ecoplaning OY, Pori,
 Coperion GmbH, Weingarten, Wuert.,
De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)
DIPESH ENGINEERING WORKS, Sej Plaza, 1-3, 3rd Floor, Junction of S. V. Road & Marve Road, Near Nutan High School, Malad (W), Mumbai, 400064 (+91 (022) 4073 6736; FAX: +91 (022) 4073 6737; e-mail: sales@dipeshengg.net; web site: www.dipeshengg.com)
 See our ad on page 61

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

FEECO International, Inc., Green Bay, WI
 GEA France,
GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Gekko Engineering, Carson, CA
 Haldor Topsoe A/S, Lyngby
 Harrop Industries, Inc., Columbus, OH
 Innovative Processing Solutions, Aurora, IN
 Invensys Systems (UK) Ltd., Crawley
 Johnson Matthey Davy Technologies Ltd., London,
 Knighthawk Engineering, Houston, TX
 Linde AG, Engineering Division, Pullach
 Lyntek, Inc., Lakewood, CO
 Musco Engineering Associates, West Haven, CT
 PENTA Engineering, P.A., Charlotte, NC

PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Process Systems Enterprise Limited, London
REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)
 See our ad on page 17

River Consulting, Pittsburgh, Pennsylvania
ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)
Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)
 Zeton Inc., Burlington,

Engineering: plant modernization

Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Gekko Engineering, Carson, CA
 Lyntek, Inc., Lakewood, CO
 M+W Central Europe GmbH
 PENTA Engineering, P.A., Charlotte, NC
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGURD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)
 See our ad on page 17

River Consulting, Pittsburgh, Pennsylvania
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)

Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)

Engineering: pollution & environmental services

ADI Systems Inc., Wolfboro, NH
 ADI Systems Inc., Frederickton,
 Advanced Cyclone Systems, S. A., Porto
 Advanced GeoServices Corp., West Chester, PA
 Advanced Industrial Technology Corp., Paramus, NJ
AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Airflow Sciences Corporation, Livonia, MI
 Ambient Engineering Inc., Rocky Hill, NJ
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
 CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

Clean Air Engineering, Palatine, IL
 Conversion Technology, Inc., Norcross, GA
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 Environmental C&C, St. Charles, Illinois
 Epcor Industrial Systems, LP, The Woodlands, TX
 FEECO International, Inc., Green Bay, WI
FISHER-KLOSTERMAN EMITROL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
 Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois

GEA Engineering, P.C., Nanuet, NY
 HEEDUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

River Consulting, Pittsburgh, Pennsylvania
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)

TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: Iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Engineering: process design

ABZ, INC., 4451 Brookfield Corp. Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com; web site: www.abzinc.com)

ADI Systems Inc., Frederickton,
 AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
 Advanced Industrial Technology Corp., Paramus, NJ
 Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main
BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Bayer Technology Services GmbH, Leverkusen
 Biazzi SA, Chailly/Montreux
 CAI Catalysts, Gwynedd Square, PA
De Dietrich Process Systems GmbH, Hattenbergstr. 36, Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704 500; e-mail: mail@qvf.de; web site: www.qvf.com)
 Denver Mineral Engineers, Inc., Littleton, CO
EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)
 See our ad on page 151

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

FEECO International, Inc., Green Bay, WI
 GEA Engineering, P.C., Nanuet, NY
 GEA France,
GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Gekko Engineering, Carson, CA
 Haldor Topsoe A/S, Lyngby
 Harrop Industries, Inc., Columbus, OH
 Innovative Processing Solutions, Aurora, IN
 Johnson Matthey Davy Technologies Ltd., London
 KIRK Process Solutions Ltd., Walton-on-Thames
 Knighthawk Engineering, Houston, TX
 Linde AG, Engineering Division, Pullach
 Lyntek, Inc., Lakewood, CO
 M+W Central Europe GmbH
 Musco Engineering Associates, West Haven, CT
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

PENTA Engineering, P.A., Charlotte, NC
 ProSys, Inc., Baton Rouge, Louisiana
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Process Systems Enterprise Limited, London
 River Consulting, Pittsburgh, Pennsylvania
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Saliestr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spds@sandvik.com; web site: www.processsystems.sandvik.com)
SULZER CHEMTECH LTD, Sulzer Allee 48, P.O. Box 65, Winterthur 8404 (+41 52 262 11 22; FAX: +41 52 262 00 60; e-mail: chemtech@sulzer.com; web site: www.sulzer.com)

TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)
 Zeton Inc., Burlington,

Engineering: process modeling

Airflow Sciences Corporation, Livonia, MI
EKATO RUEHR- UND MISCHTECHNIK GMBH, Hoheflum-Str.37, Schopfheim, D-79650 (+49 7622 290; FAX: +49 7622 29 213; e-mail: info@ekato.com; web site: www.ekato.com)

See our ad on page 151
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
 Gekko Engineering, Carson, CA

HEAT TRANSFER RESEARCH, INC. (HTRI), P.O. Box 1390, Navasota, Texas 77868 (+1.979.690.5050; FAX: +1.979.690.3250; e-mail: htri@htri.net; web site: www.htri.net)

Invensys Systems (UK) Ltd, Crowley Johnson Matthey Davy Technologies Ltd., London Johnson Matthey Davy Technologies Ltd., London, Knighthawk Engineering, Houston, TX ProSys, Inc., Baton Rouge, Louisiana

PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Process Systems Enterprise Limited, London
Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)

Engineering: procurement

Gekko Engineering, Carson, CA
Lyntek, Inc., Lakewood, CO
PENTA Engineering, P.A., Charlotte, NC
River Consulting, Pittsburgh, Pennsylvania

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)

Engineering: project management

Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main
BEST

Bayer Technology Services GmbH, Leverkusen
Coperion GmbH, Weingarten, Wuertt.,
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Gekko Engineering, Carson, CA
HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
INOX-TECH INC., Ste. Catherine
Innovative Processing Solutions, Aurora, IN
Johnson Matthey Davy Technologies Ltd., London,
Musco Engineering Associates, West Haven, CT
PENTA Engineering, P.A., Charlotte, NC
ProSys, Inc., Baton Rouge, Louisiana
River Consulting, Pittsburgh, Pennsylvania
S&C Electric Company, Chicago, IL

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Wood Group Mustang, 17404 Katy Freeway, Texas 77094 (e-mail: vikas.moharir@woodgroup.com)

Engineering: research

CAI Catalysts, Gwynedd Square, PA
DECHEMA e.V., Frankfurt am Main
Harrop Industries, Inc., Columbus, OH
HEAT TRANSFER RESEARCH, INC. (HTRI), P.O. Box 1390, Navasota, Texas 77868 (+1.979.690.5050; FAX: +1.979.690.3250; e-mail: htri@htri.net; web site: www.htri.net)

Johnson Matthey Davy Technologies Ltd., London
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Sias, New Castle, DE
TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
Xiril AG, Hombrechtikon
Xiril AG, Hombrechtikon

Equipment testing

Airflow Sciences Corporation, Livonia, MI
HEAT TRANSFER RESEARCH, INC. (HTRI), P.O. Box 1390, Navasota, Texas 77868 (+1.979.690.5050; FAX: +1.979.690.3250; e-mail: htri@htri.net; web site: www.htri.net)

JENIKE & JOHANSON INC., 400 Business Park Dr., Tyngsboro, Massachusetts 01879-1077 (978-649-3300; FAX: 978-649-3399; e-mail: info@jenike.com; web site: www.jenike.com)

Knighthawk Engineering, Houston, TX

Newson Gale Ltd, Nottingham
S&C Electric Company, Chicago, IL
TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

Equipment, used: procurement & supply

INDECK POWER EQUIPMENT CO., 1111 Willis Ave. (CE), Wheeling, Illinois 60090 (800-446-3325; 847-541-8300; FAX: 847-541-9984; e-mail: info@indeck-power.com; web site: www.indeck.com)

Lyntek, Inc., Lakewood, CO
TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

ISO certification

Lloyd's Register Quality Assurance Ltd., Houston, TX

Inspection

Applus RTD USA, Houston, TX

Modular Clean Labs

HEMCO CORPORATION, 711 South Powell Road, Independence, Missouri 64056 (800-779-4362; 816-796-2900; FAX: 816-796-3333; e-mail: info@hemcocorp.com; web site: www.HEMCOcorp.com)

Pilot plant services

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

GEA France,
GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Johnson Matthey Davy Technologies Ltd., London
Pope Scientific, Inc., Saukville, Wisconsin
Procedyne Corp., New Brunswick, NJ
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Zeton Inc., Burlington,

Plant decommissioning and dismantling

ABZ, INC., 4451 Brookfield Court Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com; web site: www.abzinc.com)

M+W Central Europe GmbH

Plant documentation services

PENTA Engineering, P.A., Charlotte, NC
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Plant relocation

M+W Central Europe GmbH
REDGUARD, 4340 S. West Street, Wichita, Kansas 67217 (855.REDGUARD; 855.733.4827; FAX: 316-440-1800; web site: www.redguard.com)
See our ad on page 17

Process safety management services

Conversion Technology, Inc., Norcross, GA
HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
PENTA Engineering, P.A., Charlotte, NC
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, Westfield, New Jersey
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: lredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Risk analysis

Bayer Technology Services GmbH, Leverkusen

HIMA Paul Hildebrandt GmbH + Co KG, Bruehl
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: lredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Technology licensing

Air Liquide Global E&C Solutions Germany GmbH, Frankfurt am Main
Gharpure Consulting Engineers Pvt Ltd, Pune
Interdevelopment, Inc., Arlington, VA
Johnson Matthey Davy Technologies Ltd., London,

TRAINING

Information Services

Chemical Information Services, Dallas, Texas

Publishing

BIC Alliance, Kemah, TX

Training personnel, maintenance

ATS RheoSystems, Cannon Instrument Company, Borden-town, NJ
BS & B Safety Systems, Inc., Tulsa, OK
BUSS ChemTech AG, Pratteln 1
BERNDORF BAND GMBH, Leobersdorferstr. 26, Berndorf, 2560 (43-2672-800-0; FAX: 43-2672-84176; e-mail: band@berndorf.at; web site: www.berndorf-band.at)
Dresser-Rand, Corporate Headquarters, Houston, TX
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Lloyd's Register Quality Assurance Ltd., Houston, TX
MTS World, LLC, Cypress, Texas
Martin Engineering, Neponset, IL
PR/GUETECHNIK Dieter Busch AG, Ismaning,
S&C Electric Company, Chicago, IL
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Swagelok Co., Solon, OH
V2 Flow Controls, Burr Ridge, Illinois
Wall Colmonoy Corporation, Madison Heights, MI

Training personnel, pollution control

Conversion Technology, Inc., Norcross, GA
Emergency Film Group, Edgartown, MA
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
MTS World, LLC, Cypress, Texas
TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

Training personnel, safety & health

Emergency Film Group, Edgartown, MA
MTS World, LLC, Cypress, Texas
Martin Engineering, Neponset, IL
PROCESS ENGINEERING ASSOCIATES, LLC, 700 South Illinois Ave., Suite A-202, Oak Ridge, Tennessee 37830 (865-220-8722; FAX: 865-220-8729; e-mail: info@processengr.com; web site: www.processengr.com)

TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: lredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Training systems, plant operators

BUSS ChemTech AG, Pratteln 1
Emergency Film Group, Edgartown, MA
MTS World, LLC, Cypress, Texas
PR/GUETECHNIK Dieter Busch AG, Ismaning,
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Swagelok Co., Solon, OH

9

INFORMATION TECHNOLOGIES

- 178 Computer hardware**
- 179 Computer software**
- 180 Computers for design & engineering**

COMPUTER HARDWARE

Computers, mainframe

Psychsoftpc, Quincy, MA

Computers, monitors & displays

ASDQMS, Chagrin Falls, OH
Intergraph Benelux BV, Hoofddorp
PR/üFTECHNIK Dieter Busch AG , Ismaning,
Psychsoftpc, Quincy, MA

Computers, personal

Intergraph Benelux BV, Hoofddorp
Psychsoftpc, Quincy, MA

Computers, printers & plotters

Intergraph Benelux BV, Hoofddorp

Digital computers, data processing

Psychsoftpc, Quincy, MA
Symmetric Research, Las Vegas, NV

Input & output equipment, data processing

Acromag, Inc., Wixom, MI
HydroTec Systems Co., Inc., Tiskilwa, IL
Sierra Monitor Corp., Milpitas, CA
Symmetric Research, Las Vegas, NV

Manufacturing execution systems

Werum Software & Systems AG, Lueneburg

Simulators

Psychsoftpc, Quincy, MA

COMPUTER SOFTWARE

Advanced process control

CAMO Software, Oslo,
DataLyzor International, Inc., Michigan
Emerson Process Management, 8301 Cameron Rd.,
Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com);
web site: www.emersonprocess.com)

Northwest Analytics, Inc., Portland, OR
PQ Systems, Dayton, Ohio
Parsec, Inc., Anaheim, CA
ProSys, Inc., Baton Rouge, Louisiana
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187
(+49(0)721/595-4706; web site: www.siemens.com)

Alarm Management

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com);
web site: www.emersonprocess.com)

FIKE, 704 S. 10th St., Blue Springs, MO 64015 (1-866-758-6004; 816-229-3405; FAX: 816-229-4615; e-mail: industrialprotection@fike.com);
web site: www.fike.com)

ProSys, Inc., Baton Rouge, Louisiana
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187
(+49(0)721/595-4706; web site: www.siemens.com)
Vista Control Systems, Inc., Los Alamos, NM

Asset management

AVEVA, Cambridge,
AVEVA Inc, Houston, TX
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com);
web site: www.emersonprocess.com)
Parsec, Inc., Anaheim, CA
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187
(+49(0)721/595-4706; web site: www.siemens.com)

Bar coding

Dematic Corp., Grand Rapids, MI
Isotech, Inc, Hatfield, PA
K-Sun Corporation, Somerset, WI
Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, Westfield, New Jersey

Batch control

CAMO Software, Oslo,
DataLyzor International, Inc., Michigan
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com);
web site: www.emersonprocess.com)
Parsec, Inc., Anaheim, CA
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187
(+49(0)721/595-4706; web site: www.siemens.com)
Werum Software & Systems AG, Lueneburg

Calibration management

Beamex, Inc., Marietta, GA
DataLyzor International, Inc., Michigan
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com);
web site: www.emersonprocess.com)
Intergraph Corporation Corporate Headquarters, Madison, AL
PQ Systems, Dayton, Ohio
Quality America, Inc., Tucson, AZ

Chemical equipment design

CPFD Software, Albuquerque, New Mexico
CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300,
Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com);
web site: www.chemstations.com)
Intergraph Benelux BV, Hoofddorp
Intergraph Corporation Corporate Headquarters, Madison, AL
ProSim SA, LABEGE
Process Systems Enterprise Limited, London
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spdsde@sandvik.com);
web site: www.processsystems.sandvik.com)
Technical Database Services, Inc. (TDS), New York, NY

Chemical plant design & maintenance

ABZ, INC., 4451 Brookfield Corp. Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com);
web site: www.abzinc.com)

AVEVA, Cambridge,
CU SERVICES LLC, Elk Grove, IL
CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300,
Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com);
web site: www.chemstations.com)
Intergraph Benelux BV, Hoofddorp
Intergraph Corporation, Houston, Texas
Intergraph Corporation Corporate Headquarters, Madison, AL
Invensys Systems (UK) Ltd, Crawley

Process Systems Enterprise, Inc., 3 Wing Drive, Suite 103,
New Jersey 07927 (e-mail: j.wade@psenterprise.com)
SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spdsde@sandvik.com);
web site: www.processsystems.sandvik.com)

Technical Database Services, Inc. (TDS), New York, NY

Chemical process design



ABZ, INC., 4451 Brookfield Corp. Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com);
web site: www.abzinc.com)

Chemstations Europe GmbH, Berlin
CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300,
Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com);
web site: www.chemstations.com)
Engineering Software, Germantown, MD
Intergraph Benelux BV, Hoofddorp
Intergraph Corporation Corporate Headquarters, Madison, AL
Invensys Systems (UK) Ltd, Crawley
ProSim SA, LABEGE
Process Systems Enterprise, Inc., 3 Wing Drive, Suite 103,
New Jersey 07927 (e-mail: j.wade@psenterprise.com)
Process Systems Enterprise Limited, London
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187
(+49(0)721/595-4706; web site: www.siemens.com)
Technical Database Services, Inc. (TDS), New York, NY

Computational fluid dynamics

ABZ, INC., 4451 Brookfield Corp. Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com);
web site: www.abzinc.com)

Adaptive Research, Honolulu, HI
Airflow Sciences Corporation, Livonia, MI
CPFD Software, Albuquerque, New Mexico
CU SERVICES LLC, Elk Grove, IL

Computer Software

AVEVA, Cambridge,
BLUEBEAM SOFTWARE, 55 S. Lake Ave, California
91101 (e-mail: jmcguinness@bluebeam.com)

Data acquisition & process control

Acromag, Inc., Wixom, MI
Airflow Sciences Corporation, Livonia, MI
Auburn Systems, LLC, Danvers, MA
CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300,
Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com);
web site: www.chemstations.com)
DataLyzor International, Inc., Michigan
Davis-Standard, LLC, Pawcatuck, CT
Digital Applications International, London
Emerson Process Management, 8301 Cameron Rd.,
Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com);
web site: www.emersonprocess.com)
HydroTec Systems Co., Inc., Tiskilwa, IL
InfoMetric, Inc., Bothell, Washington
Intergraph Corporation Corporate Headquarters, Madison, AL
Invensys Systems (UK) Ltd, Crawley
Northwest Analytics, Inc., Portland, OR
PQ Systems, Dayton, Ohio
Parsec, Inc., Anaheim, CA
Polytec, Inc., Process Analytics, Hopkinton
Quality America, Inc., Tucson, AZ
Rockwell Software Brand, Rockwell Automation, Inc., Milwaukee, Wisconsin

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spdsde@sandvik.com);
web site: www.processsystems.sandvik.com)
Siemens Process Industries and Drives, Alpharetta, Georgia
Sierra Monitor Corp., Milpitas, CA
StatPoint Technologies Inc., Warrenton, VA
VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com);
web site: www.vega.com)

See our ad on page 111

Vista Control Systems, Inc., Los Alamos, NM
Werum Software & Systems AG, Lueneburg

Data visualization

DataLyzor International, Inc., Michigan
Golden Software, Golden, Colorado
InfoMetric, Inc., Bothell, Washington
Intergraph Corporation, Houston, Texas
Northwest Analytics, Inc., Portland, OR
Parsec, Inc., Anaheim, CA
StatPoint Technologies Inc., Warrenton, VA
VEGA Americas, Inc., Cincinnati, OH
VEGA GRIESHABER KG, Am Hohenstein 113, Schiltach, 77761 (49-78-36-50-0; FAX: 49-78-36-50-201; e-mail: info.de@vega.com);
web site: www.vega.com)
See our ad on page 111

Design of experiments

CAMO Software, Oslo,
Process Systems Enterprise Limited, London
StatPoint Technologies Inc., Warrenton, VA

Enterprise resource planning

AVEVA, Cambridge,
AVEVA Inc, Houston, TX

Environmental-compliance reporting

Auburn Systems, LLC, Danvers, MA
Dakota Software Corp., Cleveland, OH
Logical Technology, Inc., Peoria, IL
Technical Database Services, Inc. (TDS), New York, NY

Environmental, health & safety

Dakota Software Corp., Cleveland, OH
K-Sun Corporation, Somerset, WI
Logical Technology, Inc., Peoria, IL
Technical Database Services, Inc. (TDS), New York, NY

Failure analysis

Chemir, A Division of Evans Analytical Group, Maryland Heights, MO
Northwest Analytics, Inc., Portland, OR

Hazardous-waste management

Clean Harbors, Norwell, MA
Dakota Software Corp., Cleveland, OH

Heat-exchange modeling

Airflow Sciences Corporation, Livonia, MI
CU SERVICES LLC, Elk Grove, IL
CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300,
Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com);
web site: www.chemstations.com)
HEAT TRANSFER RESEARCH, INC. (HTRI), P.O. Box 1390, Navasota, Texas 77868 (+1.979.690.5050; FAX: +1.979.690.3250; e-mail: htri@htri.net);
web site: www.htri.net)

ISO compliance

Accelerated Technology Laboratories, Inc., West End, NC
Beamex, Inc., Marietta, GA
Dakota Software Corp., Cleveland, OH
PQ Systems, Dayton, Ohio
StatPoint Technologies Inc., Warrenton, VA

Information Technology

AVEVA, Cambridge,
BLUEBEAM SOFTWARE, 55 S. Lake Ave, California
91101 (e-mail: jmcguinness@bluebeam.com)

Information management

AVEVA, Cambridge,
AVEVA Inc, Houston, TX
Accelerated Technology Laboratories, Inc., West End, NC
DataLyzor International, Inc., Michigan
Intergraph Corporation, Houston, Texas
Intergraph Corporation Corporate Headquarters, Madison, AL
Invensys Systems (UK) Ltd, Crawley
Logical Technology, Inc., Peoria, IL
Northwest Analytics, Inc., Portland, OR
StatPoint Technologies Inc., Warrenton, VA
Technical Database Services, Inc. (TDS), New York, NY

Laboratory information management

Accelerated Technology Laboratories, Inc., West End, NC
Digital Applications International, London
Northwest Analytics, Inc., Portland, OR

Maintenance management

AVEVA Inc, Houston, TX
Beamex, Inc., Marietta, GA
Digital Applications International, London
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

HydroTec Systems Co., Inc., Tiskilwa, IL
Intergraph Benelux BV, Hoofddorp
Intergraph Corporation Corporate Headquarters, Madison, AL
Parsec, Inc., Anaheim, CA

Manufacturing execution systems

Digital Applications International, London
Parsec, Inc., Anaheim, CA
Siemens Process Industries and Drives, Alpharetta, Georgia
Werum Software & Systems AG, Lueneburg

Material Safety Data Sheet (MSDS) management

K-Sun Corporation, Somerset, WI
Logical Technology, Inc., Peoria, IL

Materials management

AVEVA, Cambridge,
AVEVA Inc, Houston, TX
Digital Applications International, London
Intergraph Corporation, Houston, Texas
Intergraph Corporation Corporate Headquarters, Madison, AL
Logical Technology, Inc., Peoria, IL
Siemens Process Industries and Drives, Alpharetta, Georgia

Mathematics & statistics

CAMO Software, Oslo
DataLyzr International, Inc., Michigan
InfoMetrix, Inc., Bothell, Washington
MTR Software, Toronto
PQ Systems, Dayton, Ohio
Quality America, Inc., Tucson, AZ
StatPoint Technologies Inc., Warrenton, VA

Neural-network simulation

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Physical properties

CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300, Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com; web site: www.chemstations.com)
Engineering Software, Germantown, MD
ProSim SA, LABEGE
Process Systems Enterprise, Inc., 3 Wing Drive, Suite 103, New Jersey 07927 (e-mail: j.wade@psenterprise.com)
Technical Database Services, Inc. (TDS), New York, NY

Plant optimization

AVEVA Inc, Houston, TX
DataLyzr International, Inc., Michigan
Dematic Corp., Grand Rapids, MI
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Invensys Systems (UK) Ltd, Crawley
Parsec, Inc., Anaheim, CA
ProSim SA, LABEGE
Process Systems Enterprise, Inc., 3 Wing Drive, Suite 103, New Jersey 07927 (e-mail: j.wade@psenterprise.com)
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187 (+49)(0)721/595-4706; web site: www.siemens.com)

TowerScan, Sarnia,
TowerScan, Port Huron, MI
TowerScan, Port Huron, MI
TowerScan, Sarnia,

Pressure vessel design

PP PUBLICO Publications, Essen, NRW

Process control

CAMO Software, Oslo
DataLyzr International, Inc., Michigan
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)
FOSS NIRSystems, Inc., Laurel, MD
InfoMetrix, Inc., Bothell, Washington

Invensys Systems (UK) Ltd, Crawley
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Northwest Analytics, Inc., Portland, OR
PQ Systems, Dayton, Ohio
Polytec, Inc., Process Analytics, Hopkinton
ProSys, Inc., Baton Rouge, Louisiana
Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, Westfield, New Jersey
Quality America, Inc., Tucson, AZ
Rockwell Automation, Inc., Milwaukee, WI
Rockwell Software Brand, Rockwell Automation, Inc., Milwaukee, Wisconsin

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Sallerstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spde@sandvik.com; web site: www.processsystems.sandvik.com)

Schenck Process GmbH, Darmstadt
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187 (+49)(0)721/595-4706; web site: www.siemens.com)

StatPoint Technologies Inc., Warrenton, VA
Vista Control Systems, Inc., Los Alamitos, NM
Werum Software & Systems AG, Lueneburg

Process optimization

Adaptive Resources, Carnegie, PA
CAMO Software, Oslo
Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Engineering Software, Germantown, MD
HydroTec Systems Co., Inc., Tiskilwa, IL
Invensys Systems (UK) Ltd, Crawley
Northwest Analytics, Inc., Portland, OR
ProSys, Inc., Baton Rouge, Louisiana
Process Systems Enterprise, Inc., 3 Wing Drive, Suite 103, New Jersey 07927 (e-mail: j.wade@psenterprise.com)

Process Systems Enterprise Limited, London
Quality America, Inc., Tucson, AZ
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187 (+49)(0)721/595-4706; web site: www.siemens.com)
StatPoint Technologies Inc., Warrenton, VA
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

TowerScan, Sarnia,
TowerScan, Port Huron, MI
TowerScan, Port Huron, MI
Werum Software & Systems AG, Lueneburg

Process safety management

AVEVA Inc, Houston, TX
ProSys, Inc., Baton Rouge, Louisiana
Process Systems Engineering LLC, Industrial Automation and Process Safety Engineering, Westfield, New Jersey
Siemens AG, A&D GC 3, Siemensallee 84, Karlsruhe 76187 (+49)(0)721/595-4706; web site: www.siemens.com)

Process simulation

Airflow Sciences Corporation, Livonia, MI
Chemstations Europe GmbH, Berlin
CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300, Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com; web site: www.chemstations.com)

Emerson Process Management, 8301 Cameron Rd., Austin, TX 78754 (800-752-6893; 512-835-2190; FAX: 512-418-7505; e-mail: InfoCentral@EmersonProcess.com; web site: www.emersonprocess.com)

Engineering Software, Germantown, MD
HEAT TRANSFER RESEARCH, INC. (HTRI), P.O. Box 1390, Navasota, Texas 77868 (+1.979.690.5050; FAX: +1.979.690.3250; e-mail: htri@htri.net; web site: www.htri.net)

Invensys Systems (UK) Ltd, Crawley
ProSim SA, LABEGE
Process Systems Enterprise, Inc., 3 Wing Drive, Suite 103, New Jersey 07927 (e-mail: j.wade@psenterprise.com)
Process Systems Enterprise Limited, London
WinSim Inc., Richmond, TX

Production scheduling

Werum Software & Systems AG, Lueneburg

Project management

AVEVA Inc, Houston, TX

Quality assurance or control

ASDQMS, Chagrin Falls, OH
Beamex, Inc., Marietta, GA
CAMO Software, Oslo
DataLyzr International, Inc., Michigan
FOSS NIRSystems, Inc., Laurel, MD
Northwest Analytics, Inc., Portland, OR
PQ Systems, Dayton, Ohio
Parsec, Inc., Anaheim, CA

Polytec, Inc., Process Analytics, Hopkinton
Quality America, Inc., Tucson, AZ
StatPoint Technologies Inc., Warrenton, VA
Werum Software & Systems AG, Lueneburg

Regulatory compliance

Beamex, Inc., Marietta, GA
Dakota Software Corp., Cleveland, OH
Digital Applications International, London
Intergraph Corporation Corporate Headquarters, Madison, AL
K-Sun Corporation, Somerset, WI
Logical Technology, Inc., Peoria, IL
PQ Systems, Dayton, Ohio
Parsec, Inc., Anaheim, CA
Technical Database Services, Inc. (TDS), New York, NY
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: Iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Werum Software & Systems AG, Lueneburg

Software development

AVEVA Inc, Houston, TX
BLUEBEAM SOFTWARE, 55 S. Lake Ave, California 91101 (e-mail: jmcguinness@bluebeam.com)

Digital Applications International, London
Engineering Software, Germantown, MD
HEAT TRANSFER RESEARCH, INC. (HTRI), P.O. Box 1390, Navasota, Texas 77868 (+1.979.690.5050; FAX: +1.979.690.3250; e-mail: htri@htri.net; web site: www.htri.net)

HydroTec Systems Co., Inc., Tiskilwa, IL
InfoMetrix, Inc., Bothell, Washington
Intergraph Corporation, Houston, Texas
ProSim SA, LABEGE
ProSys, Inc., Baton Rouge, Louisiana
Rockwell Software Brand, Rockwell Automation, Inc., Milwaukee, Wisconsin
Werum Software & Systems AG, Lueneburg

Software, other

BLUEBEAM SOFTWARE, 55 S. Lake Ave, California 91101 (e-mail: jmcguinness@bluebeam.com)
CU SERVICES LLC, Elk Grove, IL
CHEMSTATIONS, INC., 3100 Wilcrest Drive, Suite 300, Houston, Texas 77042 (800-243-6223 (Worldwide); 713-978-7700; FAX: 713-978-7727; e-mail: sales@chemstations.com; web site: www.chemstations.com)

Dakota Software Corp., Cleveland, OH
Digital Applications International, London
Engineering Software, Germantown, MD
Golden Software, Golden, Colorado
HydroTec Systems Co., Inc., Tiskilwa, IL
InfoMetrix, Inc., Bothell, Washington
Intergraph Benelux BV, Hoofddorp
Intergraph Corporation Corporate Headquarters, Madison, AL
Invensys Systems (UK) Ltd, Crawley
K-Sun Corporation, Somerset, WI
Logical Technology, Inc., Peoria, IL
Northwest Analytics, Inc., Portland, OR
PRJ/UFTECHNIK Dieter Busch AG, Ismaning,
ProSim SA, LABEGE
StatPoint Technologies Inc., Warrenton, VA
TLV CORPORATION, 13901 S. Lakes Dr., Charlotte, North Carolina 28273 (800-858-8727; 704-597-9070; FAX: 704-583-1610; web site: www.tlv.com)

See our ad on page 98

Supply chain management

Dematic Corp., Grand Rapids, MI
Hoover Container Solutions, Houston, TX
Intergraph Corporation, Houston, Texas
Intergraph Corporation Corporate Headquarters, Madison, AL

COMPUTERS FOR DESIGN & ENGINEERING

Computer aided design & drafting systems

AVEVA Inc, Houston, TX
Advanced GeoServices Corp., West Chester, PA
CU SERVICES LLC, Elk Grove, IL
Intergraph Benelux BV, Hoofddorp
Intergraph Corporation Corporate Headquarters, Madison, AL
Psychsoftpc, Quincy, MA
kubit USA, Houston, Texas

Process simulation systems

ABZ, INC., 4451 Brookfield Corp. Dr., Suite 107, Chantilly, Virginia 20151 (800-747-7401; 703-631-7401; FAX: 703-631-5282; e-mail: sales@abzinc.com; web site: www.abzinc.com)
CPFD-Software, Albuquerque, New Mexico
Engineering Software, Germantown, MD
Invensys Systems (UK) Ltd, Crawley
ProSim SA, LABEGE
Process Systems Enterprise Limited, London

10

ENVIRONMENTAL SERVICES

- 182 Air pollution control equipment & systems**
- 182 Environmental services**
- 183 Waste handling equipment & systems**
- 184 Water pollution control equipment & systems**

AIR POLLUTION CONTROL EQUIPMENT & SYSTEMS

Adsorption systems, carbon

Branch Environmental Corp., Somerville, NJ
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@croil.com; web site: www.crleanair.com)
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 Environmental C&C, St. Charles, Illinois
 Jacobi Carbons, Inc., Columbus, OH
 TIGG Corporation, Oakdale, PA
 United Manufacturing International 2000, Red Bluff, CA

Adsorption systems, other

Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 McGill AirClean LLC, Columbus, OH
 Munters Corporation, Zeol, Amesbury, MA
 TECAM GROUP
 TIGG Corporation, Oakdale, PA

Afterburners

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 Anguil Environmental Systems, Inc., Milwaukee, WI
 Process Combustion Corp., Pittsburgh, PA
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Air pollution abatement systems

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 Advanced Industrial Technology Corp., Paramus, NJ
AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)
 Ambient Engineering Inc., Rocky Hill, NJ
 Anguil Environmental Systems, Inc., Milwaukee, WI
BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)
BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
 Buhler Inc., Minneapolis, MN
 CECO Filters, a CECO Environmental Company, Telford, Pennsylvania

CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@croil.com; web site: www.crleanair.com)
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 Environmental C&C, St. Charles, Illinois
 Epcon Industrial Systems, LP, The Woodlands, TX
FISHER-KLOSTERMAN EMTRAL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
 Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois
GEA GERMANY ETTLINGEN, Am Hardtwald 1, Ettlingen, 76275 (49-7243-7050; FAX: 49-7243-705330; e-mail: chemical@gea.com; web site: www.gea.com)
 See our ad on page 89

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
HONEYWELL, 101 Columbia Rd., Morristown, New Jersey 07962 (800-626-4974; 973-455-2000; FAX: 973-455-5722)
 Hypercat Advanced Catalyst Products, West Chester, PA
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
 McGill AirClean LLC, Columbus, OH
 Munters Corporation, Zeol, Amesbury, MA
 Munters Corporation, Air Treatment, Amesbury, MA
 Newman Regency Group, Stafford, TX
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)
 Process Combustion Corp., Pittsburgh, PA
 Staplex Co., Air Sampler Div., Brooklyn, NY
 Strobic Air, a CECO Environmental Company, Telford, Pennsylvania
 TECAM GROUP
 TIGG Corporation, Oakdale, PA
 Turner EnviroLogic, Inc., Deerfield Beach, FL
 Westchester Germicide Co., Pittsburgh, PA

Chimneys, stacks & vents
 McGill AirClean LLC, Columbus, OH
 McGill AirFlow LLC, Groveport, OH
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Combustors, catalytic

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 Hypercat Advanced Catalyst Products, West Chester, PA
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Combustors, other

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Deodorizers

CECO Filters, a CECO Environmental Company, Telford, Pennsylvania
 Epcon Industrial Systems, LP, The Woodlands, TX
 Westchester Germicide Co., Pittsburgh, PA

Flares, stack & accessories

John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)
 Process Combustion Corp., Pittsburgh, PA
ZEECO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

Hydrogen sulfide removal systems

HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
 Haldor Topsoe A/S, Lyngby
 McGill AirClean LLC, Columbus, OH
 sera ProDos GmbH, Immenhausen,

Nox control systems

Advanced Industrial Technology Corp., Paramus, NJ
BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
 Branch Environmental Corp., Somerville, NJ
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
 Haldor Topsoe A/S, Lyngby
 Hypercat Advanced Catalyst Products, West Chester, PA
John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)
 M&C TechGroup, Ventura, CA
 McGill AirClean LLC, Columbus, OH
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Spraying Systems Co., Wheaton, IL
 TECAM GROUP
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Odor-control systems

ADI Systems Inc., Wolfboro, NH
 ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 Advanced Air Technologies, Inc., Corunna, MI
 Advanced Industrial Technology Corp., Paramus, NJ
 Ambient Engineering Inc., Rocky Hill, NJ
 CECO Filters, a CECO Environmental Company, Telford, Pennsylvania
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@croil.com; web site: www.crleanair.com)
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 Environmental C&C, St. Charles, Illinois
 HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
 Hypercat Advanced Catalyst Products, West Chester, PA
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
 Process Combustion Corp., Pittsburgh, PA
 Strobic Air, a CECO Environmental Company, Telford, Pennsylvania
 TIGG Corporation, Oakdale, PA
 Turner EnviroLogic, Inc., Deerfield Beach, FL

Particulate removal systems

Advanced Cyclone Systems, S. A., Porto
BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)
 Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois
 HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
 Hypercat Advanced Catalyst Products, West Chester, PA
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)
 McGill AirClean LLC, Columbus, OH

Sulfur Recovery

Haldor Topsoe A/S, Lyngby
John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)

Vapor recovery systems

BORSIG GmbH, Berlin
BIONOMIC INDUSTRIES INC., 777 Corporate Dr., Mahwah, New Jersey 07430-2008 (800-311-6767; 201-529-1094; FAX: 201-529-0252; e-mail: sales@bionomicind.com; web site: www.bionomicind.com)
 CECO Filters, a CECO Environmental Company, Telford, Pennsylvania
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@croil.com; web site: www.crleanair.com)
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 Environmental C&C, St. Charles, Illinois
John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)
 Nash, a Gardner Denver Product, Bentleyville, PA
ZEECO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

ENVIRONMENTAL SERVICES

Air pollution control

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 Advanced Cyclone Systems, S. A., Porto
 Air/Compliance Consultants, Inc., Pittsburgh, PA
 Airflow Sciences Corporation, Livonia, MI
 Ambient Engineering Inc., Rocky Hill, NJ
 Anguil Environmental Systems, Inc., Milwaukee, WI
 Auburn Systems, LLC, Danvers, MA
BELTRAN TECHNOLOGIES, INC., 1133 East 35 Street, Brooklyn, New York 11210 (718-338-3311; FAX: 718-253-9028; e-mail: info@beltrantechnologies.com; web site: www.beltrantechnologies.com)
CR CLEANAIR, Six Campus Drive, Parsippany, New Jersey 07054 (908 232 4200; FAX: 908-232-2146; e-mail: info@croil.com; web site: www.crleanair.com)
 Conversion Technology, Inc., Norcross, GA
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 Environmental C&C, St. Charles, Illinois
FISHER-KLOSTERMAN EMTRAL, A CECO ENVIRONMENTAL COMPANY, Louisville, Kentucky
 Flex-Kleen, a CECO Environmental Company, Glendale Heights, Illinois
 HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
 Hypercat Advanced Catalyst Products, West Chester, PA
John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)
 M&C TechGroup, Ventura, CA
 Munters Corporation, Zeol, Amesbury, MA
NOL-TEC SYSTEMS, INC., 425 Apollo Dr., Lino Lakes, Minnesota 55014 (651-780-8600; FAX: 651-780-4400; e-mail: sales@nol-tec.com; web site: www.nol-tec.com)

Schutte & Koerting, Treviso, PA
 Schutte & Koerting, Treviso, PA
 Siemens Process Industries and Drives, Norcross, Georgia
 Strobic Air, a CECO Environmental Company, Telford, Pennsylvania
 TIGG Corporation, Oakdale, PA
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: lredmon@trinityconsultants.com; web site: www.trinityconsultants.com)
 Turner EnviroLogic, Inc., Deerfield Beach, FL
 United Manufacturing International 2000, Red Bluff, CA
 Westchester Germicide Co., Pittsburgh, PA
 ts-systemfilter gmbh, Ahorn-Berolzeim

Bioremediation services

GEA Engineering, P.C., Nanuet, NY

Compliance-information management

Clean Air Engineering, Palatine, IL
 Dakota Software Corp., Cleveland, OH
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Environmental consulting

Advanced GeoServices Corp., West Chester, PA
 Air/Compliance Consultants, Inc., Pittsburgh, PA
 Airflow Sciences Corporation, Livonia, MI
 Ambient Engineering Inc., Rocky Hill, NJ
 Clean Air Engineering, Palatine, IL
 Conversion Technology, Inc., Norcross, GA
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 GEA Engineering, P.C., Nanuet, NY
 Spartan Chemical Services Inc., Jersey City, NJ
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

Environmental Solutions Since 1974

Trinity Consultants' highly responsive staff delivers innovative, cost effective solutions. Our services include:

- Air permitting & compliance assistance
- Environmental management services
- Air dispersion modeling
- Environmental training
- EH&S information management solutions



Offices Nationwide
 (800) 229-6655
[trinityconsultants.com](http://www.trinityconsultants.com)

TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Environmental laboratories

Ambient Engineering Inc., Rocky Hill, NJ
 Clean Air Engineering, Palatine, IL

Environmental regulations, interpreting

Advanced GeoServices Corp., West Chester, PA
 Air/Compliance Consultants, Inc., Pittsburgh, PA
 Dakota Software Corp., Cleveland, OH
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Full-service environmental firms

ADI Systems Inc., Wolfeboro, NH
 Advanced GeoServices Corp., West Chester, PA
 Ambient Engineering Inc., Rocky Hill, NJ
 Clean Harbors, Norwell, MA
 Conversion Technology, Inc., Norcross, GA
 GEA Engineering, P.C., Nanuet, NY

Geotechnical services

Advanced GeoServices Corp., West Chester, PA

Groundwater remediation

ABS Materials, Inc., Ohio
 Advanced GeoServices Corp., West Chester, PA
 Conversion Technology, Inc., Norcross, GA
 GEA Engineering, P.C., Nanuet, NY
 TIGG Corporation, Oakdale, PA
 United Manufacturing International 2000, Red Bluff, CA

Hazard audits

Dakota Software Corp., Cleveland, OH
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

Hazardous waste services

Advanced GeoServices Corp., West Chester, PA
 Clean Harbors, Norwell, MA

TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
 Veolia Environmental Services, Chicago, Illinois

Indoor-air-quality services

Air/Compliance Consultants, Inc., Pittsburgh, PA
 Ambient Engineering Inc., Rocky Hill, NJ
BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselein, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Conversion Technology, Inc., Norcross, GA
 Strobic Air, a CECO Environmental Company, Telford, Pennsylvania

Recycling firms

Midwest Steel Company Inc., Houston, Texas

Remote monitoring

M&C TechGroup, Ventura, CA
 Russelectric Inc., Hingham, MA

Sludge handling

Boerger Pumps, Chanhassen, MN
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
 See our ad on page 137

LUXME INTERNATIONAL LTD., 3155 Matte Blvd, Brossard, QC, J4Y 2P4 (450-619-1999; e-mail: info@luxme.com)

Markland Specialty Engineering Ltd., Georgetown, ProSonic LLC, Milwaukee, WI
 SRS Crisafulli, Inc., Glendive, MT
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
 Vector Technologies Ltd., Milwaukee, WI
 Veolia Environmental Services, Chicago, Illinois

Soil remediation

ABS Materials, Inc., Ohio
 Advanced GeoServices Corp., West Chester, PA
 Anguil Environmental Systems, Inc., Milwaukee, WI
 CHEMetrics Inc., Calverton, Virginia
 Conversion Technology, Inc., Norcross, GA
 GEA Engineering, P.C., Nanuet, NY
KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)
 See our ad on page 137

TIGG Corporation, Oakdale, PA
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA

Spill contingency, emergency response

TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)
 Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA

Spill control & emergency response

Clean Harbors, Norwell, MA
 ITW Polymers Adhesives, North America, Danvers, MA
 Spill Containment Direct, Buffalo, MN
 TIGG Corporation, Oakdale, PA
 Trans Environmental Systems, Inc., Charlottesville, Virginia

Training services

MTS World, LLC, Cypress, Texas
TEAM INDUSTRIAL SERVICES, INC., 200 Hermann Dr., Alvin, Texas 77511 (800-662-8326; 800-662-8326; FAX: 281-331-4107; e-mail: contact@teaminc.com; web site: www.teamindustrialservices.com)
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

VOC control

ABS Materials, Inc., Ohio
 ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 Anguil Environmental Systems, Inc., Milwaukee, WI
 BORSIG GmbH, Berlin
 Durr Systems, Inc., Clean Technology Systems, Plymouth, MI
 Environmental C&C, St. Charles, Illinois
 Hypercat Advanced Catalyst Products, West Chester, PA
 McGill AirClean LLC, Columbus, OH
 Munters Corporation, Air Treatment, Amesbury, MA
 Munters Corporation, Zeol, Amesbury, MA
 TMTS Associates, Inc., Combustion/Air Pollution Control, Atlanta, GA
 Turner EnviroLogic, Inc., Deerfield Beach, FL
 United Manufacturing International 2000, Red Bluff, CA

Waste minimization & recycling

Clean Harbors, Norwell, MA
 Herbold Meckesheim USA, Resource Recycling Systems Inc., Slatersville, RI
 Progressive Recovery Inc., Dupo, IL
 Veolia Environmental Services, Chicago, Illinois

Waste testing & analysis

Ambient Engineering Inc., Rocky Hill, NJ
 Turner Designs Hydrocarbon Instruments, Inc., Fresno, CA

Waste transportation

Clean Harbors, Norwell, MA
 Veolia Environmental Services, Chicago, Illinois

Waste treatment facilities, other

ADI Systems Inc., Wolfeboro, NH
 ADI Systems Inc., Frederickton, Biowater Technology, Cumberland, Rhode Island
 Clean Harbors, Norwell, MA
 GEA Netherlands A&S-Hertogenbosch, 's-Hertogenbosch, Veolia Environmental Services, Chicago, Illinois
WABASH POWER EQUIPMENT CO., 444 Carpenter Ave., P.O. Box C, Wheeling, Illinois 60090-0427 (800-704-2002; 847-541-5600; FAX: 847-541-1279; e-mail: info@wabashpower.com; web site: www.wabashpower.com)

Water-pollution control services

ADI Systems Inc., Wolfeboro, NH
 ADI Systems Inc., Frederickton, CHEMetrics Inc., Calverton, Virginia
 Entex Technologies Inc, Chapel Hill, NC
 Evoqua, Alpharetta, Georgia
 HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan
 Spartan Chemical Services Inc., Jersey City, NJ
 TIGG Corporation, Oakdale, PA
TRINITY CONSULTANTS, 12770 Merit Drive, Suite 900, Dallas, Texas 75251 (800-229-6655; 972-661-8100; FAX: 972-385-9203; e-mail: iredmon@trinityconsultants.com; web site: www.trinityconsultants.com)

WASTE HANDLING EQUIPMENT & SYSTEMS

Anaerobic treatment systems

ADI Systems Inc., Wolfeboro, NH
 ADI Systems Inc., Frederickton, Boerger Pumps, Chanhassen, MN
 Newman Regency Group, Stafford, TX
 ProSonic LLC, Milwaukee, WI

Containers, hazardous waste

Assmann Corp. of America, Garrett, IN
 Associated Bag Company, Milwaukee, WI
 Environmental Compliance Products, Inc., Huntington Beach, CA
 Vector Technologies Ltd., Milwaukee, WI

Disposal units, hazardous waste

Process Combustion Corp., Pittsburgh, PA
 Vector Technologies Ltd., Milwaukee, WI

Disposal units, liquid waste

Vector Technologies Ltd., Milwaukee, WI

Disposal units, sewage

Vector Technologies Ltd., Milwaukee, WI

Incinerators

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA
 Anguil Environmental Systems, Inc., Milwaukee, WI
 Process Combustion Corp., Pittsburgh, PA
 TECAM GROUP
 Turner EnviroLogic, Inc., Deerfield Beach, FL
ZEECO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

Incinerators, gas & liquid

Process Combustion Corp., Pittsburgh, PA
 TECAM GROUP
 Turner EnviroLogic, Inc., Deerfield Beach, FL
ZEECO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

Incinerators, sludge

TECAM GROUP

Oxidizers, catalytic

John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)

Newman Regency Group, Stafford, TX
TECAM GROUP
Turner EnviroLogic, Inc., Deerfield Beach, FL

Oxidizers, thermal

ADWEST TECHNOLOGIES, a CECO Environmental Company, Anaheim, CA

Anguil Environmental Systems, Inc., Milwaukee, WI
John Zink Hamworthy Combustion, 11920 East Apache Street, Tulsa, OK 74116 (918.234.2800; FAX: 918.234.1800; e-mail: info@johnzink.com; web site: www.johnzinkhamworthy.com)

McGill AirClean LLC, Columbus, OH
Procedyne Corp., New Brunswick, NJ
TECAM GROUP

Turner EnviroLogic, Inc., Deerfield Beach, FL
ZECCO, INC., 22151 E. 91st St., Broken Arrow, Oklahoma 74014 (918-258-8551; FAX: 918-251-5519; e-mail: sales@zeeco.com; web site: www.zeeco.com)

Spill collectors, tank car

Trans Environmental Systems, Inc., Charlottesville, Virginia

Sumps, acid neutralizing

Koch Knight, LLC, East Canton, Ohio

WATER POLLUTION CONTROL EQUIPMENT & SYSTEMS

Aerators, water pollution

Delta Cooling Towers Inc., Roxbury Township, NJ
Elmridge Inc., Livonia, Michigan
Newman Regency Group, Stafford, TX
Team Industries, Inc., Kaukauna, WI

Biological treatment

ADI Systems Inc., Wolfeboro, NH
ADI Systems Inc., Fredericton, NB
Biowater Technology, Cumberland, Rhode Island
Entex Technologies Inc, Chapel Hill, NC
Evoqua, Alpharetta, Georgia
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

Bio-oxidation units

Ambient Engineering Inc., Rocky Hill, NJ
Entex Technologies Inc, Chapel Hill, NC
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

HONEYWELL, 101 Columbia Rd., Morristown, New Jersey 07962 (800-626-4974; 973-455-2000; FAX: 973-455-5722)

Chlorinators

Fluid Metering, Inc., 5 Aerial Way, Suite 500, Syosset, New York 11791 (800-223-3388; 516-922-6050; FAX: 516-624-8261; e-mail: pumps@fmipump.com; web site: www.fmipump.com)

PCA GmbH, Heusweiler
Pollution Control Systems, Inc., Milford, OH

Diffusers, water pollution control

BETE FOG NOZZLE INC., 50 Greenfield St, Greenfield, Massachusetts 01301 (800-235-0049; 413-772-0846; FAX: 413-772-6729; e-mail: sales@bete.com; web site: www.bete.com)

Newman Regency Group, Stafford, TX

Digesters, sewage sludge

Pollution Control Systems, Inc., Milford, OH
Westech Engineering Inc., Salt Lake City, UT

Filters, bio-oxidation

HONEYWELL, 101 Columbia Rd., Morristown, New Jersey 07962 (800-626-4974; 973-455-2000; FAX: 973-455-5722)

Flocculation equipment

Newman Regency Group, Stafford, TX
sera ProDos GmbH, Immenhausen,

Liners, pond

Trans Environmental Systems, Inc., Charlottesville, Virginia
Watersaver Co., a division of CDI, Commerce City, CO

Oil skimmers

SANDVIK PROCESS SYSTEMS, DIV. OF SANDVIK MATERIALS TECHNOLOGY DEUTSCHLAND GMBH, Salierstr. 35, Postfach 4262, Fellbach, 70719 (49-711-5105-0; FAX: 49-711-5105-152; e-mail: info.spsde@sandvik.com; web site: www.processsystems.sandvik.com)

Separators, oil-water

AMACS, Houston, TX
Boerger Pumps, Chanhassen, MN
Evoqua, Alpharetta, Georgia
Faudi GmbH, Stadtlallendorf
Hilliard Corp., Elmira, NY
KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

Newman Regency Group, Stafford, TX
Pollution Control Systems, Inc., Milford, OH
Samuel Pressure Vessel Group, Marinette, WI

Sewage treating units

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Entex Technologies Inc, Chapel Hill, NC
MICRODYN-NADIR GmbH, Kasteler Str. 45, Wiesbaden, D-65203 (+49 (0)611-962-6001; FAX: +49 (0)611-962-9237; e-mail: info@microdyn-nadir.de; web site: www.microdyn-nadir.de)

Microdyn Technologies, Inc., Raleigh, North Carolina
Pollution Control Systems, Inc., Milford, OH
Pulsair Systems, Inc., Bellevue, Washington

Sludge dewaterers

AKW Apparate + Verfahren GmbH, Hirschau, Bavaria
Boerger Pumps, Chanhassen, MN
GEA Mechanical Equipment US, Inc, GEA Westfalia Separator Division, Northvale, NJ

GEA WESTFALIA SEPARATOR GROUP GMBH, Werner-Habig-Str. 1., Oelde, 59302 (+ 49-2522-77-0; FAX: + 49-2522-77-2488; e-mail: ws.info@gea.com; web site: www.gea.com)

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

WYSSMONT CO. INC., 1470 Bergen Blvd., Fort Lee, New Jersey 07024 (201-947-4600; FAX: 201-947-0324; e-mail: sales@wyssmont.com; web site: www.wyssmont.com)

See our ad on page 135

Sludge dryers

Buss-SMS-Canzler GmbH, Kaiserstr. 13-15, Butzbach, 35510 (49-6033-85-0; FAX: 49-6033-85-249; e-mail: info@sms-vt.com; web site: www.sms-vt.com)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Encon Evaporators, Hooksett, NH

GIG KARASEK GMBH, Neusiedlerstrasse 15-19, Gloggnitz-Stuppach 2640 (+43-2662-42780-0; FAX: +43-2662-42824; e-mail: office@gigkarasek.at; web site: www.gigkarasek.com)

Gebrüder Loedige Maschinenbau GmbH, Paderborn Heyl & Patterson Inc., Renneburg Division, Pittsburgh, Pennsylvania

KOMLINE-SANDERSON ENGINEERING CORP., 12 Holland Ave., Peapack, New Jersey 07977 (800-225-5457 North American; 908-234-1000; FAX: 908-234-9487; e-mail: info@komline.com; web site: www.komline.com)

See our ad on page 137

Spill prevention equipment

Trans Environmental Systems, Inc., Charlottesville, Virginia

Strippers, air

Branch Environmental Corp., Somerville, NJ
Environmental C&C, St. Charles, Illinois
HEE-DUALL, A CECO ENVIRONMENTAL COMPANY, Owosso, Michigan

KIMRE, INC., 744 SW 1st Street, Homestead, Florida 33030 (305 233-4249; FAX: 305 233-8687; e-mail: sales@kimre.com; web site: www.kimre.com)

Tanks, settling

CHARLES ROSS & SON CO., 710 Old Willets Path, P.O. Box 12308, Hauppauge, New York 11788-0615 (800-243-7677; 631-234-0500; FAX: 631-234-0691; e-mail: sales@mixers.com; web site: www.mixers.com)

See our ad on page 6

Waste-recovery treating systems

Encon Evaporators, Hooksett, NH
Lyntek, Inc., Lakewood, CO
Progressive Recovery Inc., Dupo, IL

Wastewater neutralization systems

Acrison Inc., Moonachie, NJ
Pulsair Systems, Inc., Bellevue, Washington



HOT PRODUCTS

CHEMICAL ENGINEERING'S PREMIUM PRODUCT SHOWCASE FOR THE LATEST PRODUCTS AND TECHNOLOGIES IN THE CHEMICAL PROCESSING INDUSTRIES.

TO SUBSCRIBE TO THE E-LETTER, PLEASE VISIT:
WWW.CHEMENGONLINE.COM/ELETTER-SIGNUP

11 PROCESS CHEMICALS

185 Process chemicals

PROCESS CHEMICALS

Acids, inorganic

AIC, Framingham, MA
Cole Chemical, Houston, Texas
Covestro LLC, Pittsburgh, Pennsylvania

De Dietrich Process Systems GmbH, Hattenbergstr. 36,
Mainz 55122 (+49 6131 9704 0; FAX: +49 6131 9704
500; e-mail: mail@qvf.de; web site: www.qvf.com

Acids, organic

CellMark Deutschland GmbH, Chemicals, Duesseldorf,
Eastman Chemical Co. Inc., Kingsport, Tennessee
Platt & Bauer, Inc., Waterbury, CT

Activated carbon

Environmental C&C, St. Charles, Illinois
Evoqua, Alpharetta, Georgia
Jacobi Carbons, Inc., Columbus, OH
TIGG Corporation, Oakdale, PA
United Manufacturing International 2000, Red Bluff, CA

Active pharmaceutical ingredients

AIC, Framingham, MA
VanDeMark Chemical Inc., Lockport, NY

Adsorbents, Activated Alumina

CellMark Deutschland GmbH, Chemicals, Duesseldorf,

Adsorbents, for PCBs

ABS Materials, Inc., Ohio
Jacobi Carbons, Inc., Columbus, OH

Adsorbents, for carbon dioxide

Arkema Inc., King of Prussia, Pennsylvania
BASF Corporation, Catalysts & Adsorbents, 25 Middle-
sex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845;
732-205-5000; e-mail: chemical-catalysts@basf.com;
web site: www.catalysts.basf.com)

Jacobi Carbons, Inc., Columbus, OH

Adsorbents, for hydrocarbons

ABS Materials, Inc., Ohio

Environmental C&C, St. Charles, Illinois
Jacobi Carbons, Inc., Columbus, OH

Adsorbents, for oil

ABS Materials, Inc., Ohio
Jacobi Carbons, Inc., Columbus, OH

Adsorbents, nonpolar

ABS Materials, Inc., Ohio
TankLink, a wholly-owned subsidiary of Tetular Corporation, Chicago, IL

Adsorbents, spill control

ABS Materials, Inc., Ohio
Cole Chemical, Houston, Texas

Adsorbents, zeolites

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Alcohols, other

Cole Chemical, Houston, Texas
Pfaltz & Bauer, Inc., Waterbury, CT

Alcohols, oxo

Eastman Chemical Co. Inc., Kingsport, Tennessee

Alkalies

Cole Chemical, Houston, Texas

Antioxidants

Cachat, M. F., Co., Headquarters, Lakewood, OH
Cole Chemical, Houston, Texas

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Argon

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Biocides, halogenated

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Biocides, inorganic

Cachat, M. F., Co., Headquarters, Lakewood, OH

Biocides, other

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Biocides, phenolics

LANXESS

Energizing Chemistry

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Catalysts, Raney nickel

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalysts, acid

Haldor Topsoe A/S, Lyngby

Catalysts, cracking

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalysts, custom

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

CAI Catalysts, Gwynedd Square, PA

YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysync@ys-inc.com; web site: www.ys-inc.com)

Catalysts, dehydrogenation, spent

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalysts, desulfurization

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

CellMark Deutschland GmbH, Chemicals, Duesseldorf, Haldor Topsoe A/S, Lyngby

Catalysts, hydrogenation

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

COMESSA, 101 rue du Rhin-Napoleon, Strasbourg, 67100 (33-3-88-79-41-41; FAX: 33-3-88-79-02-04; e-mail: comessa@comessa.fr; web site: www.comessa.com)

Catalysts, hydrotreating

Haldor Topsoe A/S, Lyngby

Catalysts, organic synthesis

CellMark Deutschland GmbH, Chemicals, Duesseldorf, Pfaltz & Bauer, Inc., Waterbury, CT

Catalysts, other

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

CAI Catalysts, Gwynedd Square, PA

Catalysts, oxidation

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Cachat, M. F., Co., Headquarters, Lakewood, OH

Haldor Topsoe A/S, Lyngby
Hypercat Advanced Catalyst Products, West Chester, PA
KDF Fluid Treatment, Inc., Three Rivers, MI

YS INC., 4531 County Rd. 458, Collinsville, 35961 (256-845-5501; FAX: 205-845-5560; e-mail: ysync@ys-inc.com; web site: www.ys-inc.com)

Catalysts, palladium

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalysts, platinum

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Hypercat Advanced Catalyst Products, West Chester, PA

Catalysts, polymerization

Arkema Inc., King of Prussia, Pennsylvania

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Catalysts, polyolefin production

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalysts, precious metal

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

CAI Catalysts, Gwynedd Square, PA
Hypercat Advanced Catalyst Products, West Chester, PA

Catalysts, reforming

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

CAI Catalysts, Gwynedd Square, PA
Haldor Topsoe A/S, Lyngby

Catalysts, rhenium

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalysts, rhodium

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalysts, ruthenium

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalyst supports & systems

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

CAI Catalysts, Gwynedd Square, PA
CPI Wirecloth & Screens Inc., Pearland, TX
Christy Catalytic LLC, St. Louis, MO

Catalysts, urethane production

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Cachat, M. F., Co., Headquarters, Lakewood, OH

Catalysts, vinyl production

Arkema Inc., King of Prussia, Pennsylvania

Catalysts, zeolite

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Chelating agents

AIC, Framingham, MA
Cole Chemical, Houston, Texas

Defoamers

Arkema Inc., King of Prussia, Pennsylvania
Cachat, M. F., Co., Headquarters, Lakewood, OH
Momentive Performance Materials Inc., Waterford, New York

Defoamers, chemical

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Momentive Performance Materials Inc., Waterford, New York

Spartan Chemical Services Inc., Jersey City, NJ

Degreasers

Summit Industrial Products, Tyler, TX

Desiccants

Arkema Inc., King of Prussia, Pennsylvania

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Cachat, M. F., Co., Headquarters, Lakewood, OH
CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 (800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvci.com; web site: www.cortecvci.com)

VanDeMark Chemical Inc., Lockport, NY

Dewatering agents

VanDeMark Chemical Inc., Lockport, NY

Dispersing agents, leather

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Dispersing agents, other

AOC RESINS, 955 Highway 57 East, Collierville, Tennessee 38017 (800-238-7536; 901-854-2800; FAX: 901-854-1183; e-mail: sales@aoc-resin.com; web site: www.aoc-resins.com)

Arkema Inc., King of Prussia, Pennsylvania
Momentive Performance Materials Inc., Waterford, New York
Spartan Chemical Services Inc., Jersey City, NJ

Dispersing agents, pigment

Cachat, M. F., Co., Headquarters, Lakewood, OH

Dispersing agents, rubber

Cachat, M. F., Co., Headquarters, Lakewood, OH
LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Dispersing agents, textile

Momentive Performance Materials Inc., Waterford, New York

Emulsifiers

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Flame retardants

Arkema Inc., King of Prussia, Pennsylvania
Cachat, M. F., Co., Headquarters, Lakewood, OH
CellMark Deutschland GmbH, Chemicals, Duesseldorf,
LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Helium

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Hydrogen

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

ThyssenKrupp Industrial Solutions AG, Business Unit Process Technologies, Friedrich-Uhde-Str. 15, Dortmund 44141 (49-231-547-0; FAX: 49-231-547-3032; e-mail: process-technologies@thyssenkrupp.com; web site: www.thyssenkrupp-industrial-solutions.com)

Inhibitors, corrosion

Cachat, M. F., Co., Headquarters, Lakewood, OH
CellMark Deutschland GmbH, Chemicals, Duesseldorf,
CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvci.com; web site: www.cortecvci.com)

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Nitrogen

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Odor-control chemicals

ABS Materials, Inc., Ohio

Organic intermediates

CellMark Deutschland GmbH, Chemicals, Duesseldorf,
Eastman Chemical Co. Inc., Kingsport, Tennessee

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Pfaltz & Bauer, Inc., Waterbury, CT
VanDeMark Chemical Inc., Lockport, NY

Oxygen

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

AirSep Corp., A Chart Industries Company, A Chart Industries Company, Buffalo, New York

Ozone

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

AirSep Corp., A Chart Industries Company, A Chart Industries Company, Buffalo, New York

Pigments

AOC RESINS, 955 Highway 57 East, Collierville, Tennessee 38017 (800-238-7536; 901-854-2800; FAX: 901-854-1183; e-mail: sales@aoc-resin.com; web site: www.aoc-resins.com)

Cachat, M. F., Co., Headquarters, Lakewood, OH
Cristal, Hunt Valley, Maryland

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Preservatives

AIC, Framingham, MA
Cachat, M. F., Co., Headquarters, Lakewood, OH
LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Resins, water-soluble

AOC RESINS, 955 Highway 57 East, Collierville, Tennessee 38017 (800-238-7536; 901-854-2800; FAX: 901-854-1183; e-mail: sales@aoc-resin.com; web site: www.aoc-resins.com)

Cachat, M. F., Co., Headquarters, Lakewood, OH
Covestro LLC, Pittsburgh, Pennsylvania
Dymax Corp., Torrington, CT

Solvents, alcohols

Cole Chemical, Houston, Texas

Solvents, drug extracting

CellMark Deutschland GmbH, Chemicals, Duesseldorf,
Pfaltz & Bauer, Inc., Waterbury, CT

Solvents, electronic

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Solvents, ethers

CellMark Deutschland GmbH, Chemicals, Duesseldorf,

Solvents, fluorinated

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Solvents, glycol ether

Cole Chemical, Houston, Texas
Eastman Chemical Co. Inc., Kingsport, Tennessee

Solvents, high flash

Spartan Chemical Services Inc., Jersey City, NJ

Solvents, hydrocarbons

Cole Chemical, Houston, Texas

Solvents, insecticide

Pfaltz & Bauer, Inc., Waterbury, CT

Solvents, ketones

Cole Chemical, Houston, Texas

Solvents, nonflammable

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Solvents, nontoxic

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Spartan Chemical Services Inc., Jersey City, NJ

Solvents, odorless

Summit Industrial Products, Tyler, TX

Solvents, other

MILLER-STEPHENSON CHEMICAL CO., INC., 55 Backus Ave., Danbury, Connecticut 06810 (800-992-2424; 203-743-4447; FAX: 203-791-8702; e-mail: Support@mschem.com; web site: www.miller-stephenson.com)

Summit Industrial Products, Tyler, TX

Solvents, oxygenated

CellMark Deutschland GmbH, Chemicals, Duesseldorf,

Static eliminators

Newson Gale Ltd, Nottingham

Surface active agents, anionic

Cachat, M. F., Co., Headquarters, Lakewood, OH

Surface active agents, nonionic

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Cachat, M. F., Co., Headquarters, Lakewood, OH

Surface active agents, not further specified

Momentive Performance Materials Inc., Waterford, New York

Surface active agents, other

AIR PRODUCTS AND CHEMICALS, INC., 7201 Hamilton Blvd., Allentown, Pennsylvania 18195-1501 (800-345-3148; 610-481-4911; FAX: 610-481-4381; e-mail: cheminfo@airproducts.com; web site: www.airproducts.com/chemprocessing)

Cachat, M. F., Co., Headquarters, Lakewood, OH

Thickeners, cellulose ethers

Cachat, M. F., Co., Headquarters, Lakewood, OH

Thickeners, other

Cachat, M. F., Co., Headquarters, Lakewood, OH

Thickeners, thixotropes

Cachat, M. F., Co., Headquarters, Lakewood, OH

Water treatment chemicals

ABS Materials, Inc., Ohio
CORTEC CORP., 4119 White Bear Pkwy., St. Paul, Minnesota 55110 ((800) 4-CORTEC; 651-429-1100; FAX: (651) 429-1122; e-mail: productinfo@cortecvci.com; web site: www.cortecvci.com)

LANXESS

Energizing Chemistry

LANXESS CORPORATION, 111 RIDC Park West Drive, Pittsburgh, Pennsylvania 15275 (800-526-9377; 412-809-1000; e-mail: info@lanxess.com; web site: www.US.LANXESS.com)

Spartan Chemical Services Inc., Jersey City, NJ

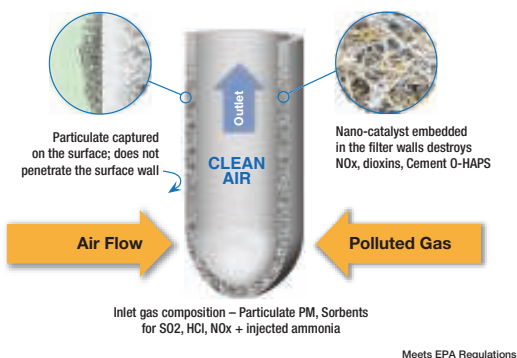
Zeolites

BASF Corporation, Catalysts & Adsorbents, 25 Middlesex/Essex Turnpike, Iselin, NJ 08830 (1-800-889-9845; 732-205-5000; e-mail: chemical-catalysts@basf.com; web site: www.catalysts.basf.com)

Catalytic Ceramic Filter System

*Low Temperature NO_x Removal
Particulate to less than 0.001 grain/dscf*

- » One system for PM, NO_x, SO₂, HCl, dioxins, mercury, cement HAPs or any combination
- » Low temp NO_x control by catalyst-embedded filters eliminates costly SCR
- » Integrated dry sorbent injection removes SO₂, HCl, mercury



Call or email today:
Ph: (989) 321-2991
kevin.moss@tri-mer.com
www.tri-mer.com

Technology Leader, air pollution control

Since 1960 Factory and Headquarters: Owosso, Michigan

© 2015 Tri-Mer Corp.

Circle 247 on p. 190 or go to
adlinks.chemengonline.com/56204-247

Advertise in the Classified



Interested?

For more information
on classified advertising,
please contact:

Diane Burleson

Email: dburleson@accessintel.com

Tel: 512.337-7890 • Fax: 512.213.4855

PTFE & PVDF Strainers

- Nom. sizes: Basket 1/2-3", Y-Strainer 1/8-4"
- Particle sizes: 12 to 1,800 microns
- Connections: Flanged; Socket or Butt Weld, IPS or Metric; Female NPT; Tri-Clamp

PTFE NPT Piping System

- Nom. sizes: 1/8 - 4" Schedule 80
- Std. sizes in stock | Installation kit available
- Extreme chem. resistance, hi-temp service
- Lower cost & easier to use than lined steel

PTFE Dip Pipes & Spargers

- PTFE lined & jacketed steel or solid PTFE
- Nominal pipe sizes 1/2 - 6"; lengths to 15'
- Large nozzle flanges = no reducing flanges
- Sparger tips fit thru nominal size nozzles

www.micromold.com
for CAD drawings and product info
914-338-8840

MICROMOLD PRODUCTS, Inc.
Engineered Plastic Fluid-Handling Products
Manufacturing in Yonkers, NY since 1950

Circle 245 on p. 190 or go to
adlinks.chemengonline.com/56204-245

**TRUCK, RAILCAR & BARGE
LOADING UP TO 30,000 BPH**



DYNATEK

ARTICULATED LOADING SYSTEMS

888.853.5444

www.dynatekloadingsystems.com

Circle 242 on p. 190 or go to
adlinks.chemengonline.com/56204-242

Stop dry start problems with
Vesconite Hilube bushings

- Low friction
- No swell
- Increase MTBR
- Reduce electricity
- Quick supply

CALL FOR SAMPLE

Tel: +27 11 616 11 11
vesconite@vesconite.com
www.vesconite.com

Circle 248 on p. 190 or go to
adlinks.chemengonline.com/56204-248

WABASH SELLS & RENTS

Boilers
20,000 - 400,000 #/Hr.
Diesel & Turbine Generators
50 - 25,000 KW
Gears & Turbines
25 - 4000 HP

We stock large inventories of:
Air Pre-Heaters • Economizers • Deaerators
Pumps • Motors • Fuel Oil Heating and Pump Sets
Valves • Tubes • Controls • Compressors
Pulverizers • Rental Boilers & Generators

24/7 Fast Emergency Service
800-704-2002
Phone: 847-541-5600 Fax: 847-541-1279
www.wabashpower.com

wabash POWER EQUIPMENT CO.
444 Carpenter Ave., Wheeling, IL 60090

Circle 249 on p. 190 or go to
adlinks.chemengonline.com/56204-249

KnightHawk Engineering
Specialists in design, failure analysis
and troubleshooting of static
and rotating equipment
www.knighthawk.com
Contact Jim Salter 281-282-9200

Circle 244 on p. 190 or go to
adlinks.chemengonline.com/56204-244

HEAT EXCHANGERS

Liquid Cooled

Air Cooled

FOR GASES & LIQUIDS!

Talk Directly with Design Engineers!
Blower Cooling Vent Condensing

INDUSTRIAL HEAT EXCHANGERS
XCHANGER
(952) 933-2559 info@xchanger.com

Circle 250 on p. 190 or go to
adlinks.chemengonline.com/56204-250

STATIC MIXERS

For turbulent or laminar flow.
LPD/LLPD/ISG for ultra-low ΔP &
unlimited viscosity. Most in stock!

Scan to learn more & get a free quote.

1-800-243-ROSS
www.StaticMixers.com

Circle 246 on p. 190 or go to
adlinks.che.com/56204-246

ADVERTISE IN THE CLASSIFIED

Contact Diane Burleson
Tel: 512-337-7890
Fax: 512-213-4855
Email:
dburleson@accessintel.com

BOILERS
Available Immediately

Lease • Rental • Sale
800.446.3325

250,000-800 PSI / 750 Deg. F.	Trailer Mounted
180,000-750 PSI / 750 Deg. F.	80K-395 PSI
165,000-1025 PSI / 850 Deg. F.	75K SH-750 PSI
165,000-395 PSI	75K-395 PSI
150,000-750 PSI / 750 Deg. F.	70K-395 PSI
135,000-750 PSI / 750 Deg. F.	70K-350 PSI
120,000-350 PSI	60K SH-750 PSI
120,000-725 PSI / 750 Deg. F.	60K-395 PSI
110,000-395 PSI	60K-395 PSI
90,000-395 PSI	40K-395 PSI
75,000-750 PSI / 750 Deg. F.	40K-350 PSI
75,000-395 PSI	36K-300 PSI
70,000-395 PSI	30K-300 PSI
70,000-350 PSI	24K-300 PSI
60,000-750 PSI / 750 Deg. F.	
50,000-395 PSI	
40,000-750 PSI	
30,000-395 PSI	
20,000-1600 PSI	
10-1,000 HP - 15-250 PSI	

INDECK
Indeck can custom design and build for you too!

Indeck Power Equipment Company
847.541.8300
info@indeck-power.com
www.indeck.com

Circle 243 on p. 190 or go to
adlinks.chemengonline.com/56204-243

Software

www.ae-sim.com
Process Simulators
Material Balance - Process Control
Power Plant Steam Cycles
Free Demo Downloads

Circle 241 on p. 190 or go to
adlinks.chemengonline.com/56204-241

GET CONNECTED TODAY
www.chemengonline.com

New Product Information

JustFAXit!

Fill out the form and circle or write in the number(s) below, cut it out, and fax it to 800-571-7730.

or go to

chemicalengineering.hotims.com

Go on the Web and fill out the online reader service card.



Name				Title
Company				
Address				
City	State/Province			Zip/Postal Code
Country\	Telephone			Fax
Email				

FREE PRODUCT INFO

(please answer all the questions)

YOUR INDUSTRY

- 01 Food & Beverages
02 Wood, Pulp & Paper
03 Inorganic Chemicals
04 Plastics, Synthetic Resins
05 Drugs & Cosmetics
06 Soaps & Detergents
07 Paints & Allied Products
08 Organic Chemicals
09 Agricultural Chemicals
10 Petroleum Refining, Coal Products
11 Rubber & Misc. Plastics
12 Stone, Clay, Glass, Ceramics
13 Metallurgical & Metal Products

- 14 Engineering, Design & Construction Firms
15 Engineering/Environmental Services
16 Equipment Manufacturer
17 Energy incl. Co-generation
18 Other _____

JOB FUNCTION

- 20 Corporate Management
21 Plant Operations incl. Maintenance
22 Engineering
23 Research & Development
24 Safety & Environmental
26 Other _____

EMPLOYEE SIZE

- 28 Less than 10 Employees
29 10 to 49 Employees

- 30 50 to 99 Employees
31 100 to 249 Employees
32 250 to 499 Employees
33 500 to 999 Employees
34 1,000 or more Employees

YOU RECOMMEND, SPECIFY,

PURCHASE

(please circle all that apply)

- 40 Drying Equipment
41 Filtration/Separation Equipment
42 Heat Transfer/Energy Conservation Equipment
43 Instrumentation & Control Systems
44 Mixing, Blending Equipment
45 Motors, Motor Controls
46 Piping, Tubing, Fittings
47 Pollution Control Equipment & Systems

- 48 Pumps
49 Safety Equipment & Services
50 Size Reduction & Agglomeration Equipment
51 Solids Handling Equipment
52 Tanks, Vessels, Reactors
53 Valves
54 Engineering Computers/Software/Peripherals
55 Water Treatment Chemicals & Equipment
56 Hazardous Waste Management Systems
57 Chemicals & Raw Materials
58 Materials of Construction
59 Compressors

1	16	31	46	61	76	91	106	121	136	151	166	181	196	211	226	241	256	271	286	301	316	331	346	361	376	391	406	421	436	451	466	481	496	511	526	541	556	571	586
2	17	32	47	62	77	92	107	122	137	152	167	182	197	212	227	242	257	272	287	302	317	332	347	362	377	392	407	422	437	452	467	482	497	512	527	542	557	572	587
3	18	33	48	63	78	93	108	123	138	153	168	183	198	213	228	243	258	273	288	303	318	333	348	363	378	393	408	423	438	453	468	483	498	513	528	543	558	573	588
4	19	34	49	64	79	94	109	124	139	154	169	184	199	214	229	244	259	274	289	304	319	334	349	364	379	394	409	424	439	454	469	484	499	514	529	544	559	574	589
5	20	35	50	65	80	95	110	125	140	155	170	185	200	215	230	245	260	275	290	305	320	335	350	365	380	395	410	425	440	455	470	485	500	515	530	545	560	575	590
6	21	36	51	66	81	96	111	126	141	156	171	186	201	216	231	246	261	276	291	306	321	336	351	366	381	396	411	426	441	456	471	486	501	516	531	546	561	576	591
7	22	37	52	67	82	97	112	127	142	157	172	187	202	217	232	247	262	277	292	307	322	337	352	367	382	397	412	427	442	457	472	487	502	517	532	547	562	577	592
8	23	38	53	68	83	98	113	128	143	158	173	188	203	218	233	248	263	278	293	308	323	338	353	368	383	398	413	428	443	458	473	488	503	518	533	548	563	578	593
9	24	39	54	69	84	99	114	129	144	159	174	189	204	219	234	249	264	279	294	309	324	339	354	369	384	399	414	429	444	459	474	489	504	519	534	549	564	579	594
10	25	40	55	70	85	100	115	130	145	160	175	190	205	220	235	250	265	280	295	310	325	340	355	370	385	400	415	430	445	460	475	490	505	520	535	550	565	580	595
11	26	41	56	71	86	101	116	131	146	161	176	191	206	221	236	251	266	281	296	311	326	341	356	371	386	401	416	431	446	461	476	491	506	521	536	551	566	581	596
12	27	42	57	72	87	102	117	132	147	162	177	192	207	222	237	252	267	282	297	312	327	342	357	372	387	402	417	432	447	462	477	492	507	522	537	552	567	582	597
13	28	43	58	73	88	103	118	133	148	163	178	193	208	223	238	253	268	283	298	313	328	343	358	373	388	403	418	433	448	463	478	493	508	523	538	553	568	583	598
14	29	44	59	74	89	104	119	134	149	164	179	194	209	224	239	254	269	284	299	314	329	344	359	374	389	404	419	434	449	464	479	494	509	524	539	554	569	584	599
15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360	375	390	405	420	435	450	465	480	495	510	525	540	555	570	585	600

If number(s) do not appear above, please write them here and circle:

Fax this page back to 800-571-7730

Advertising Sales Representatives

North America

Terry Davis

Sales Director

Chemical Engineering
2276 Eastway Rd., Decatur, GA 30033
Tel: 404-634-5123; Fax: 832-201-8823 E-mail: tdavis@chemengonline.com
Alabama, Canada, Connecticut, Delaware, Georgia, Idaho, Kentucky, Latin America, Maine, Maryland, Massachusetts, Mississippi, Montana, Nebraska, New Hampshire, New Jersey, New York, North and South Carolina, North and South Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Virginia, Washington D.C., West Virginia, Wyoming

Jason Bullock

District Sales Manager

Chemical Engineering
8325 Broadway, Ste. 202/PMB 261 Pearlard, TX 77581
Tel: 281-485-4077; Fax: 281-485-1285
E-mail: jbullock@chemengonline.com
Arizona, Arkansas, California, Colorado, Florida, Kansas, Louisiana, Missouri, Nevada, New Mexico, Oklahoma, Texas, Washington

Dan Gentile

District Sales Manager

Tel: 512-918-8075
E-mail: dgentile@chemengonline.com
Alaska, Hawaii, Illinois, Indiana, Iowa, Michigan, Minnesota, Wisconsin,

Diane Burleson

Inside Sales Manager

Chemical Engineering;
11000 Richmond Ave, Suite 690,
Houston, TX 77042
Tel: 512-337-7890
E-mail: dburleson@chemengonline.com

Product Showcase,
Literature Reviews,
Classified Display Advertising

International

Petra Trautes

Chemical Engineering
Zeilweg 44
D-60439 Frankfurt am Main
Germany
Phone: +49-69-58604760
Fax: +49-69-5700-2484
Email: ptrautes@chemengonline.com
Austria, Czech Republic, Benelux,
Eastern Europe, Germany, Scandinavia,
Switzerland, United Kingdom

Dipali Dhar

Chemical Engineering
40 Wall Street, 50th Floor, New York, NY 10005
Tel: 718-263-1162
E-mail: ddhar@accessintel.com
India

Katshuhiro Ishii

Chemical Engineering
Ace Media Service Inc., 12-6, 4-chome Nishiiko,
Adachi-ku, Tokyo 121, Japan
Tel: 81-3-5691-3335; Fax: 81-3-5691-3336
E-mail: amskatsu@dream.com
Japan

Ferruccio Silvera

Chemical Engineering
Silvera Publicita
Viale Monza, 24 Milano 20127, Italy
Tel: 39-02-284-6716;
Fax: 39-02-289-3849
E-mail: ferruccio@silvera.it/www.silvera.it
Andorra, France, Gibraltar, Greece,
Israel, Italy, Portugal, Spain

Rudy Teng

Sales Representative

Chemical Engineering;
8F-1 #181 Wulin Road
Hsinchu 30055 Taiwan
Tel: +86 13818181202, (China),
+886 921322428 (Taiwan)
Fax: +86 21 54183567
E-mail: rudy.teng@gmail.com
Asia-Pacific, Hong Kong, People's
Republic of China, Taiwan

Advertisers Index

Advertiser Page number

<i>Phone number</i>	<i>Reader Service #</i>
Abbe, Paul O.....24 1-855-789-9827 adlinks.chemengonline.com/56204-01	
American Elements.....60 adlinks.chemengonline.com/56204-20	
ARC Advisory GroupTHIRD COVER 1-781-471-1175 adlinks.chemengonline.com/56204-02	
Cleaver-Brooks, Inc.9 1-800-250-5883 adlinks.chemengonline.com/56204-09	
Corzan HP Piping Systems.....97 1-216-447-7397 adlinks.chemengonline.com/56204-21	
Dipesh Engineering Works..... 61 91.22.4073 6749/52 adlinks.chemengonline.com/56204-22	
Ekato Group 151 49 7622 29-0 adlinks.chemengonline.com/56204-23	
Federal Equipment Co. 75 1-877-503-9745 adlinks.chemengonline.com/56204-24	
Finder Pompe 19 39-039-9982-1 adlinks.chemengonline.com/56204-03	
Flexicon3 1-888-FLEXICON adlinks.chemengonline.com/56204-04	
Flexim 127 adlinks.chemengonline.com/56204-25	
Gemü Valves 109 1-678-553-3400 adlinks.chemengonline.com/56204-26	
Komline-Sanderson 137 1-800-225-5457 adlinks.chemengonline.com/56204-27	
Körting Hannover AG..... 105 adlinks.chemengonline.com/56204-28	
Load Controls25 1-888-600-3247 adlinks.chemengonline.com/56204-05	
MagnetrolSECOND COVER 1-800-624-8765 adlinks.chemengonline.com/56204-06	
Müller GmbH24 49 (0) 7623/969-0 adlinks.chemengonline.com/56204-07	

* International Edition

See bottom of opposite page
for advertising
sales representatives'
contact information

FOR ADDITIONAL NEWS AS IT DEVELOPS, PLEASE VISIT WWW.CHEMENGONLINE.COM

December 2015; VOL. 122; NO. 12

Chemical Engineering copyright © 2015 (ISSN 0009-2460) is published monthly by Access Intelligence, LLC, 9211 Corporate Blvd., 4th Floor, Rockville, MD, 20850-3245. Chemical Engineering Executive, Editorial, Advertising and Publication Offices: 40 Wall Street, 50th Floor, New York, NY 10005; Phone: 212-621-4674, Fax: 212-621-4694. Subscription rates: \$149.97 U.S. and U.S. possessions, \$197.97 Canada, and \$299 International. \$20.00 Back issue & Single copy sales. Periodicals postage paid at Rockville, MD and additional mailing offices. Postmaster: Send address changes to Chemical Engineering, Fulfillment Manager, P.O. Box 3588, Northbrook, IL 60065-3588. Phone: 847-564-9290, Fax: 847-564-9453, email: chemeng@ameda.com. Change of address, two to eight week notice requested. For information regarding article reprints, please contact Wright's Media, 1-877-652-5295, sales@wrightsmedia.com. Contents may not be reproduced in any form without written permission. Canada Post 40612608. Return undeliverable Canadian Addresses to: IMEX Global Solutions, P.O. Box 25542, LONDON, ON N6C 6B2 This publication contains text, graphics, images, and other content (collectively "Content"), which are for informational purposes only. Certain articles contain the author's personal recommendations only. RELIANCE ON ANY INFORMATION SUPPLIED IN THIS PUBLICATION IS SOLELY AT YOUR OWN RISK.

CHEMICAL ENGINEERING WWW.CHEMENGONLINE.COM DECEMBER 2015

Advertiser Page number

<i>Phone number</i>	<i>Reader Service #</i>
Myron L Company23 1-760-438-2021 adlinks.chemengonline.com/56204-08	
Nol-Tec Systems 15 1-651-780-8600 adlinks.chemengonline.com/56204-10	
Orion Instruments FOURTH COVER adlinks.chemengonline.com/56204-11	
Paharpur Cooling Towers84 91-33-4013 3000 adlinks.chemengonline.com/56204-29	
Pfeiffer Vacuum GmbH 27 49 6441 802-0 adlinks.chemengonline.com/56204-12	
* Plast-O-Matic Valves, Inc. 41 adlinks.chemengonline.com/56204-13	
PompeTravaini 13 39.0331.889000 adlinks.chemengonline.com/56204-14	
RedGuard17 1-855-REDGUARD adlinks.chemengonline.com/56204-15	
Rembe GmbH..... 19 49 2961 7405-0 adlinks.chemengonline.com/56204-16	

Advertiser Page number

<i>Phone number</i>	<i>Reader Service #</i>
Ross, Charles & Son Company6 1-800-243-ROSS adlinks.chemengonline.com/56204-17	
Saint-Gobain Ceramics..... 167 1-716-278-6233 adlinks.chemengonline.com/56204-30	
Sandvik Materials Technology ... 76 46 26 26 00 00 adlinks.chemengonline.com/56204-31	
Sandvik Process Systems.....45 49 711 5105-0 adlinks.chemengonline.com/56204-18	
TLV Corporation.....98 1-800-TLV-TRAP adlinks.chemengonline.com/56204-32	
Uniflux/Exotherm Corporation ... 62 1-713-981-9100 adlinks.chemengonline.com/56204-33	
* VEGA Grieshaber KG 111 adlinks.chemengonline.com/56204-19	
Wyssmott Company Inc. 135 1-201-947-4600 adlinks.chemengonline.com/56204-34	

Classified Index December 2015

Advertiser Page number

<i>Phone number</i>	<i>Reader Service #</i>
Applied e-Simulators Software 189 1-800-469-4887 adlinks.chemengonline.com/56204-241	
D&D Products, Inc. 189 1-888-853-5444 adlinks.chemengonline.com/56204-242	
Indeck Power Equipment Co. 189 1-800-446-3325 adlinks.chemengonline.com/56204-243	
KnightHawk Engineering 189 1-281-282-9200 adlinks.chemengonline.com/56204-244	
Micromold Products 189 1-914-338-8840 adlinks.chemengonline.com/56204-245	
Ross, Charles & Son Company 189 1-800-243-ROSS adlinks.chemengonline.com/56204-246	

Computer Software 189 Equipment, New & Used 188-189

Advertiser Page number

<i>Phone number</i>	<i>Reader Service #</i>
Tri-Mer Corporation 188 1-989-321-2991 adlinks.chemengonline.com/56204-247	
Vesconite Bearings..... 189 27 11 616 11 11 adlinks.chemengonline.com/56204-248	
Wabash Power Equipment Co.189 1-800-704-2002 adlinks.chemengonline.com/56204-249	
Xchanger, Inc..... 189 1-952-933-2559 adlinks.chemengonline.com/56204-250	

Diane Burleson

Send Advertisements
and Box replies to:

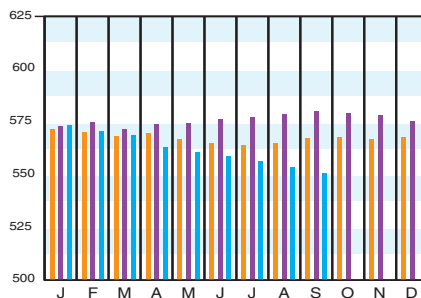
Chemical Engineering, 11000 Richmond Ave, Houston, TX 77042
E-mail: dburleson@chemengonline.com Tel: 512-337-7890

Download the CEPCI two weeks sooner at www.chemengonline.com/pci

CHEMICAL ENGINEERING PLANT COST INDEX (CEPCI)

	(1957-59 = 100)	Sept. '15 Prelim.	Aug. '15 Final	Sept. '14 Final
CE Index		550.4	553.9	580.1
Equipment		661.2	665.6	704.6
Heat exchangers & tanks		586.2	592.2	650.9
Process machinery		655.6	658.2	668.1
Pipe, valves & fittings		816.8	822.3	877.4
Process instruments		390.5	392.1	413.4
Pumps & compressors		956.4	956.5	939.0
Electrical equipment		510.0	511.8	515.7
Structural supports & misc		728.7	733.2	775.1
Construction labor		320.3	323.4	323.9
Buildings		540.3	542.0	546.3
Engineering & supervision		318.5	318.2	321.4

Annual Index:
 2007 = 525.4
 2008 = 575.4
 2009 = 521.9
 2010 = 550.8
 2011 = 585.7
 2012 = 584.6
 2013 = 567.3
 2014 = 576.1

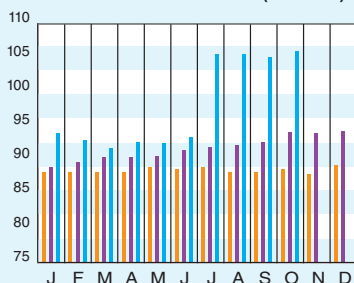


Starting with the April 2007 Final numbers, several of the data series for labor and compressors have been converted to accommodate series IDs that were discontinued by the U.S. Bureau of Labor Statistics

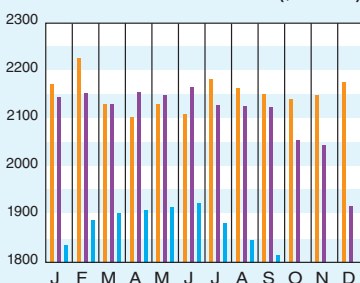
CURRENT BUSINESS INDICATORS

	LATEST	PREVIOUS	YEAR AGO
CPI output index (2012 = 100)	Oct. '15 = 106.0	Sept. '15 = 105.1	Oct. '14 = 104.0
CPI value of output, \$ billions	Sept. '15 = 1,815.5	Aug. '15 = 1,841.6	Sept. '14 = 2,141.2
CPI operating rate, %	Oct. '15 = 76.5	Sept. '15 = 75.9	Oct. '14 = 75.7
Producer prices, industrial chemicals (1982 = 100)	Oct. '15 = 237.3	Sept. '15 = 238.1	Oct. '14 = 284.6
Industrial Production in Manufacturing (2012=100)*	Oct. '15 = 106.3	Sept. '15 = 105.9	Oct. '14 = 104.3
Hourly earnings index, chemical & allied products (1992 = 100)	Oct. '15 = 159.3	Sept. '15 = 160.6	Oct. '14 = 156.2
Productivity index, chemicals & allied products (1992 = 100)†	Oct. '15 = 107.0	Sept. '15 = 107.2	Oct. '14 = 105.9

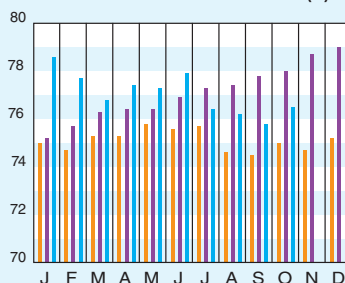
CPI OUTPUT INDEX (2000 = 100)†



CPI OUTPUT VALUE (\$ BILLIONS)



CPI OPERATING RATE (%)



*Due to discontinuance, the Index of Industrial Activity has been replaced by the Industrial Production in Manufacturing index from the U.S. Federal Reserve Board.

†For the current month's CPI output index values, the base year was changed from 2000 to 2012

#Correction: The values for the Productivity Index published in the September and October issues of *Chem. Eng.* were not correct due to the omission of an adjustment factor. The correct value for the July Productivity Index in the September issue should have been reported as 106.9, and the correct value for the August Productivity Index (October issue) should have been 107.3. We apologize for any confusion. Current business indicators provided by Global Insight, Inc., Lexington, Mass.

EXCLUSIVE AD SPACE AVAILABLE!

Feature your marketing message

The Economic Indicators department includes current industry trends and the Plant Cost Index. As one of the most valued sections in the magazine, your ad is guaranteed to reach decision makers each month. Contact your sales representative to secure this spot.

JASON BULLOCK
 jbullock@chemengonline.com

TERRY DAVIS
 tdavis@chemengonline.com

DAN GENTILE
 dgentile@chemengonline.com

PETRA TRAUTES
 ptrאותes@accessintel.com



CURRENT TRENDS

The preliminary value for the September 2015 CE Plant Cost Index (CEPCI; top; the most recent available) once again fell compared to the previous month's value, driven by declines in Equipment producer prices, as well as drops in the Buildings and Construction Labor subindices. The September CEPCI value is 5.1% lower than the corresponding value from a year ago at the same time. This represents continued growth of the year-to-year differential over the past several months. Meanwhile, the latest Current Business Indicators (CBI; middle) numbers showed a small decrease in the CPI output index and in producer prices. All indicators fell in October, except for the CPI operating rate, which ticked upward.



PRESENTING THE 20TH ANNUAL ARC INDUSTRY FORUM

Industry in Transition: Navigating the New Age of Innovation

FEBRUARY 8-11, 2016 • ORLANDO, FLORIDA

New information technologies such as Industrial Internet of Things (IIoT), Smart Manufacturing, Industrie 4.0, Digitization, and Connected Enterprise are ushering in a new age of innovation. These concepts are clearly moving past the hype, where real solutions are emerging backed by strong business cases. Expect to see innovations in smarter products, new service and operating models, new production techniques, and new approaches to design and sourcing. Join us to learn how this industrial transformation will unfold and what other companies are doing today to embrace innovation and improve their business performance.

- Industrial Cybersecurity and Safety
- Analytics and Machine Learning
- Asset Performance Management
- Service Performance Management
- IT/OT Convergence
- Automation Innovations
- Industrial Internet Platforms
- Human Capital and Organization Development
- Designing Connected Products
- Connected Smart Machines

Don't Miss Industry's #1 Networking and Learning Event:

Go to www.arcweb.com/events/arc-industry-forum-orlando/ or call 781-471-1175.

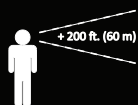
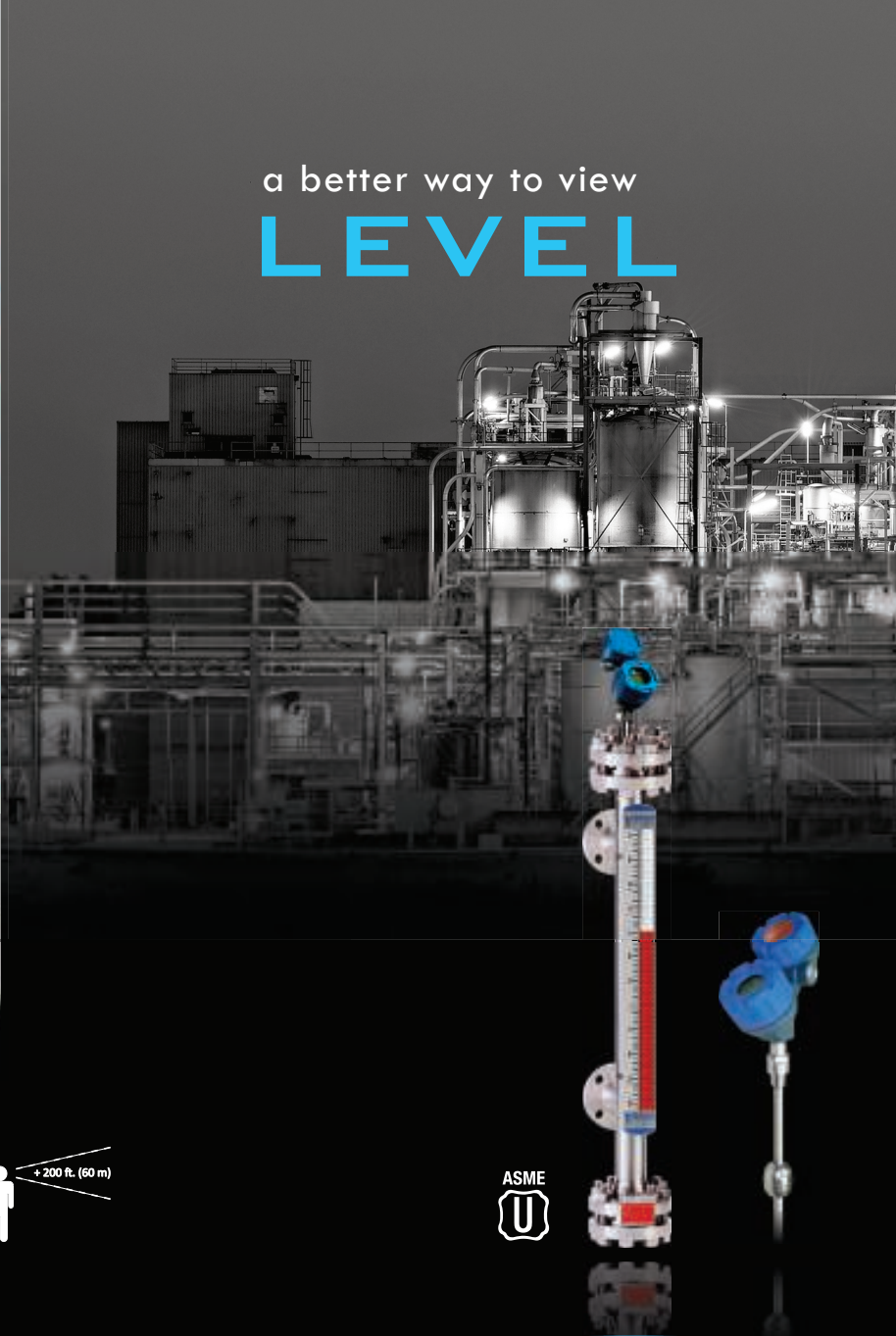
Co-Sponsored by *Chemical Engineering*



VISION, EXPERIENCE, ANSWERS FOR INDUSTRY

Circle 2 on p. 190 or go to adlinks.chemengonline.com/56204-02

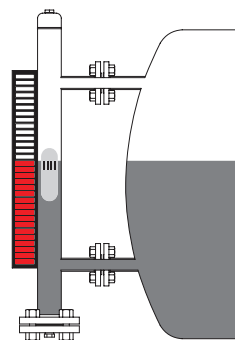
a better way to view
LEVEL



ORION
INSTRUMENTS
A Magnetrol Company

orioninstruments.com

High-visibility level indicators and transmitters from Orion Instruments are custom-engineered and built tough for the most demanding applications. Contact us to find out how personnel safety, cost of ownership, and reliability can all be improved over traditional sight glass gauges.



Circle 11 on p. 190 or go to adlinks.chemengonline.com/56204-11