

# Materials and the Environment

"Environment '90's: Managing Our Future" will be presented by the **Project Management Institute (PMI)** in Pittsburgh, PA, 17-24 September 1992. The seminar/symposium will focus on the *environmental aspects of various industries* including aerospace, automotive, defense, education, metals, pharmaceuticals, and utilities. Key personnel in R & D, engineering, construction, software, and manufacturing will present more than 100 technical papers, exhibits, special discussions, workshops, and case studies.

Circle (34) on reader service card

**"Hazardous Materials Intelligence Report,"** published weekly by **World Information Systems**, Cambridge, MA, is a recognized authority on hazardous waste and hazardous materials management. It presents the latest news and analysis of regulatory and technical developments in the hazardous waste field, including state and national regulations, legislation, policies, court decisions, pending lawsuits, and enforcement actions.

Circle (35) on reader service card

In response to the strict enforcement of laws on disposal of industrial fluids, **Hyde Products**, Cleveland, OH, is offering the new Universal Clarifier that *continuously removes solid particles from free-flowing and industrial process fluids* without interrupting the machining process. Different degrees of filtration can be obtained by varying the filter media type. The units have low operating costs, help control bacteria growth, reduce general maintenance costs, extend the useful life of liquids, and are finished in high-quality polyurethane enamel.

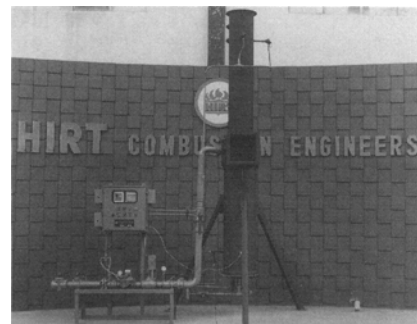
Circle (36) on reader service card

Title IV of the 1990 Clean Air Act requires that  $\text{NO}_x$  be reduced by approximately 2 million tonnes (roughly 10%) by the year 2000. With utility companies and other fuel combustion industries focusing on  $\text{SO}_2$  technology and chemical companies and refinery operators on volatile organic compound (VOC) emissions,  $\text{NO}_x$  emissions—largely overlooked by many industrial firms—are in danger of becoming the forgotten pollutant in the clean air challenge, according to **Charles River Assoc.**, Boston, MA, a management/economics consulting firm.

This oversight may result in expensive re-engineering for chemical processors, refining companies, metal producers, and electric utilities. "Control of  $\text{NO}_x$  from Stationary Sources," is offered by subscription from CRA to help executives weigh options, rationalize compliance strategies, and develop *broad-based, proactive strategic plans for assessing the economic impact of controlling multiple pollutants simultaneously.*

Circle (37) on reader service card

A new thermal oxidizer (Model HFV-200) to *process the vapor resulting from the remediation of gasoline-contaminated sites* has been introduced by **Hirt Combustion Engineers**, Montebello, CA. Gasoline is evaporated by the forced ventilation of contaminated soil. The thermal oxidizer accepts the fume stream, removes the hydrocarbon contamination, and discharges a clean, non-contaminat-

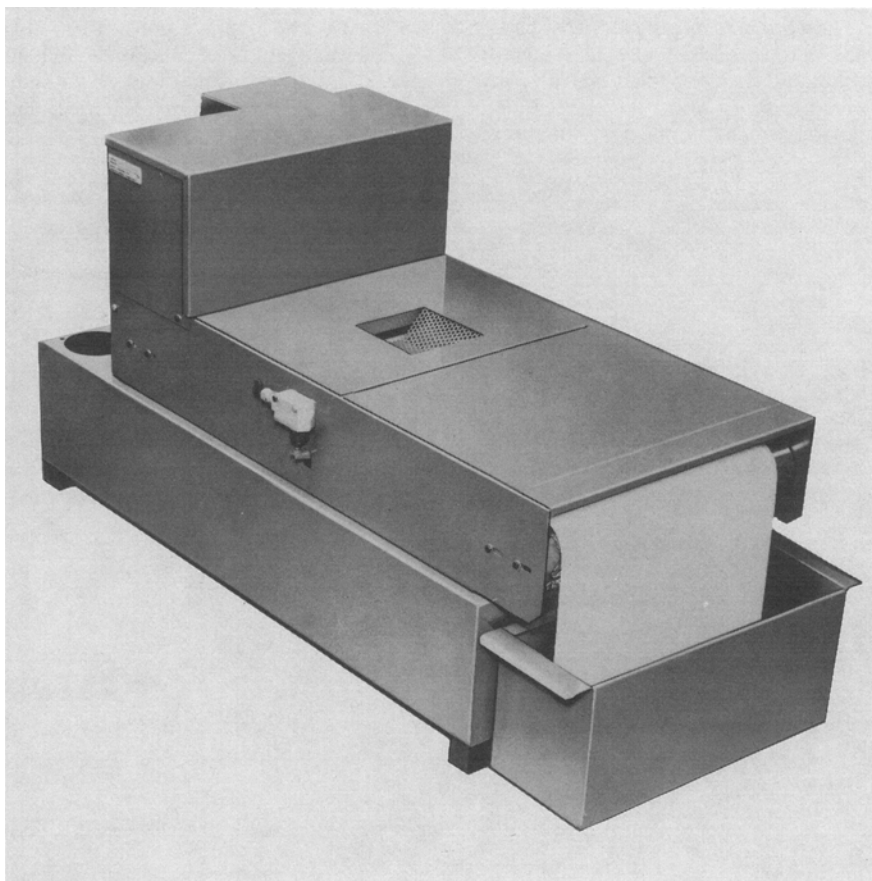


Hirt Corporation

ing stream into the atmosphere. The system is simple and virtually maintenance free, and requires no residual carbon, charcoal, catalyst, or filter.

Circle (38) on reader service card

A new series of *video training programs for emergency response teams, designed*

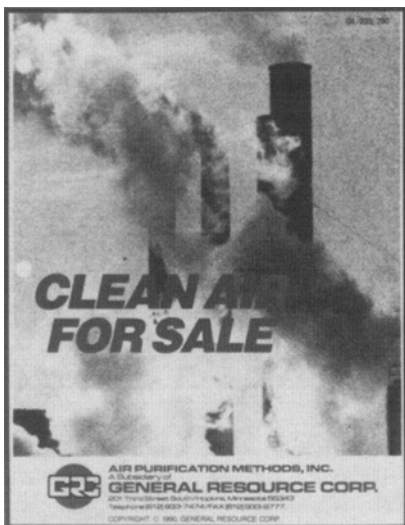


Hyde Products

especially for industrial settings, is available from Starlite Studios, San Jose, CA. Produced by Starlite Videopublishing in conjunction with **Phoenix Training Group**, a leader in emergency response team training, topics addressed include: containment, decontamination, scene management, incident command and plugging, patching, and overpacking. The complete program includes tests and certification through Phoenix Training Group. It may be rented or purchased.

Circle (39) on reader service card

A brochure/catalog (GL-233) "Clean Air for Sale" is filled with *information and application data on air pollution control products* manufactured by **Air Purification Methods**, Minneapolis, MN. APM has been a leader in the development and manufacture of systems for the control of dust, air-borne pollution, and product recovery since 1962. The flyer contains complete applications and a capability chart, with each APM product rated in a broad range of applications.

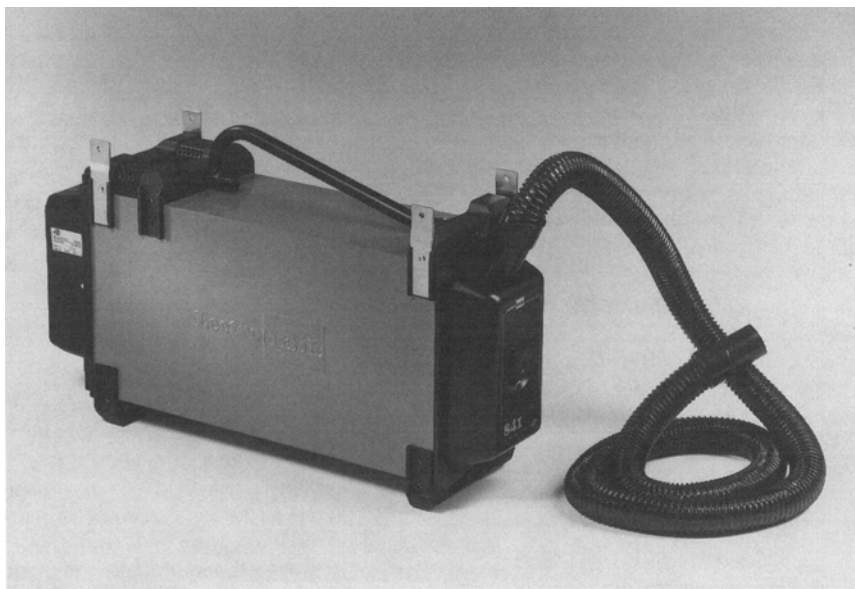


Air Purification Methods

Circle (40) on reader service card

**Lurgi, Ltd.**, Woking, UK, has been awarded a BP Chemicals contract for the design, supply, and installation of a *thermal oxidation unit for the removal of organic pollutants* in the off gas from a phthalic anhydride (PA) plant. The off gas flow rate exceeds 200,000 M<sup>3</sup>/h, the highest flow rate for any single train unit built to-date. PA is used in the manufacture of polyester and alkylid resins.

The Lurgi plant, built in the 1970s, currently uses a water wash unit. Installation of the new unit will result not only in the



Lectrostatic

liquid effluent being eliminated, but also in the emissions to atmosphere being reduced to 0.5% of current levels.

Circle (41) on reader service card

The "VinylCycle" *automated recycle sortation system* developed by **National Recovery Technologies, Inc.**, Nashville, TN, has demonstrated achievement of a level of product purity demanded by users of recycled plastic in a series of tests to separate post-consumer plastic containers. The first pass produced 99.99% purity; on the second pass, 100% purity was obtained. The tests were conducted by the **Vinyl Institute**, Wayne, NJ, in cooperation with NRT, using a stream of mixed vinyl containers in a proportion that mirrors actual collection bins.

Circle (42) on reader service card

**Government Institutes, Inc.**, Rockville, MD, plans a one-day primer on toxicology for managers, lawyers, and engineers, 22 April 1992, in Arlington, VA. "Toxicology for Non-Toxicologists" presents *an understanding of toxicology and how its concepts are applied to industrial safety and health protection*, as well as to environmental compliance program development. The seminar is recommended for anyone undertaking complex risk assessment and risk management strategies.

Also on tap by GI—"Fundamentals of Pennsylvania Environmental Law Compliance Course," 9 June 1992, Pittsburgh, PA, will present both Pennsylvania's environmental laws and regulations and Federal requirements—avoiding liabilities,

compliance with Clean Air Act Amendments of 1990, and required records and reporting. This is *essential information* for business owners, engineers, environmental managers, attorneys, and association members who do business in Pennsylvania.

Circle (43) on reader service card

A new, *portable fume eliminator* has been introduced by **Lectrostatic, Inc.**, Pittsburgh, PA, which cleans the air by removing 99.7% particulate in dangerous welding smoke and fumes. It protects both the welder and the working environment, and features automatic stop/start functions with high vacuum/low noise level.

Circle (44) on reader service card

**Schlumberger Technologies**, Billerica, MA, has combined the advanced vibration control and analysis capabilities of its S1215 with the 3595 Data Acquisition System as a *complete environmental test solution*. The S1215 Vibration Control System provides instant switching between random, sine, and shock control and offers a swept sine option. It can significantly shorten test run-up time and better control resonance through fast equalization. A personal computer supervises all activities and correlates vibration test data with static parameters from the unit being tested into a powerful database. This allows real-life conditions to be simulated in a computer-controlled environment. The system generates reports, data analysis, and customized graphic screens.

Circle (45) on reader service card

The few contaminants in used motor oil come from engine fuel, additives such as detergents, engine wear particles, and bits of airborne dirt that slip by the vehicle's air cleaner. Although some special-interest groups have argued otherwise, burning used oil on-site to recover energy is environmentally and economically sound and is, therefore, the used-oil management method of choice, according to **Robert Sun Co.**, Nashville, TX.

Sun's "**Black Gold® Multi-Oil Recycling System**" is certified to burn #2 and #5 oils and is rated for 185,000 BTU input at 82% efficiency. Emissions tests show that the system burns with zero smoke, hydrocarbons, and carbon monoxide to save energy, reduce water pollution, end hauling costs, and prevent liability. The system turns used oil into free heat and hot water.

Circle (46) on reader service card

**Dissolved organic chemical contaminants are removed from water or wastewater** by Pittsburgh, PA, **Calgon Carbon Corp.**'s new Model 4 Carbon Adsorption System. It operates on granular-activated-carbon, requiring only site water and utility hookups to be operational. Virgin and spent carbon is handled in a closed loop with carbon bed backwash capability.



Calgon Carbon Corp.

Circle (47) on reader service card

An all-polypropylene, **flame-retardant fume hood for strong acid decomposition processes and trace metal analysis** is now available from **UDG, Inc.**, Pittsburgh, PA. Unique in specifically addressing all considerations in acid digestion work, the hood meets all applicable standards for fume hoods. Its construction contains no metals or inorganic materials to contaminate samples to be analyzed and is suitable

for dirty mineral preparation activities, clean semiconductor/biological/radioactive processes, and medical or clinical applications.

Circle (48) on reader service card

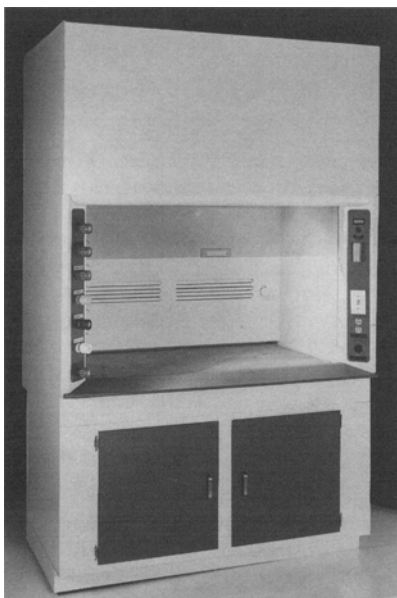
Published by **Technomic Publishing Co., Inc.**, Lancaster, PA, "**Technical and Marketing Issues Impacting the Fire Safety of Electrical, Electronic, and Composite Applications**" contains 14 reports with in-depth information including "Toxic Potency Measurement for Fire Hazard Analysis."

Circle (49) on reader service card

The final "**Whistleblower Protection Rule**," effective 2 April 1992, establishes procedures for the investigation, hearing, and review of **allegations of employer reprisal** from DOE contractor employees who identify health and safety issues, waste, fraud, and abuse within the DOE complex. As part 708 to Title 10, **Code of Federal Regulations**, the "WPR" provides employment protection to contractor employees who, as a result of reporting health and safety or mismanagement concerns are subject to consequent discrimination by their employers.

Circle (50) on reader service card

**A non-hazardous, non-flammable, recyclable, and reusable metal-cleaning solution** efficiently removes oxide from all metal types. Offered by **Gibbs Group, Inc.**, Somerset, PA., as a safe alternative to hazardous cleaning acids, "Rust Elim-

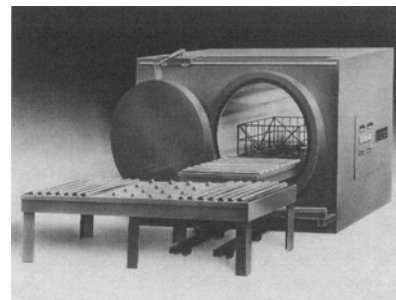


UDG, Inc.

nator®" has no harmful vapors, contains no phosphates or ammonia derivatives and will not cause hydrogen embrittlement.

Circle (51) on reader service card

**Abar Ibsen Industries**, Bensalem, PA, has introduced **Ecovac™**—a parts cleaning system that removes a wide range of surface oils from metal parts without using CFCs, solvents, toxic chemical, water, or detergents. Completely safe for the environment, the process is a closed system that provides for easy collection and recycling of recovered oil.



Abar Ibsen

The Ecovac de-oiling system **solves the environmental problems presented by solvent-based vapor degreasers and aqueous cleaning agents**. Chemical waste material disposal costs are reduced or eliminated. There are no noxious fumes, pollutants, contaminated wastewater, hydrocarbons, or CFCs released into the environment, and worker exposure to chemical atmospheres is eliminated.

Circle (52) on reader service card

A new solvent, **Dynasolve M-30**, is now being offered by **Dynaloy**, Hanover, NJ. Designed to **replace acetone, methylene chloride, MEK, and 1,1,1, trichloroethane**, it is recyclable. Its high-flash-point (230 °F) and low vapor pressure reduce operating hazards and evaporative losses.

Circle No. (53) on reader service card.

The **Met-L-Chek Co.**, Santa Monica, CA, announces two new **production developers for dune penetrant inspection**. Both are free of chromates and other environmentally-hazardous chemicals and may be disposed of easily and cost-efficiently.

Circle No. (54) on reader service card.

**DECO-CLEAN 12-300** is a new **citrus-based solvent and cleaner** introduced by Deco-Coat Products Div., **Resins Corp.**,

Greenville, RI. It's an environmentally safe alternative to acetone, toluene, xylene, MEK, MIBK, etc., and it meets or exceeds OSHA, EPA, and FDA safety standards.

Circle No. (55) on reader service card.

**NUMOR™ Corp.**, Jackson, MI, announces the introduction of the Model 3000 Coolant Recovery System designed

to **remove solid contaminants and odor-causing bacteria** from used metalworking coolants. The unit was designed because industrial waste removal costs are increasing, and also, bacteria-caused odor may affect a machine operator's productivity.

Circle No. (56) on reader service card.

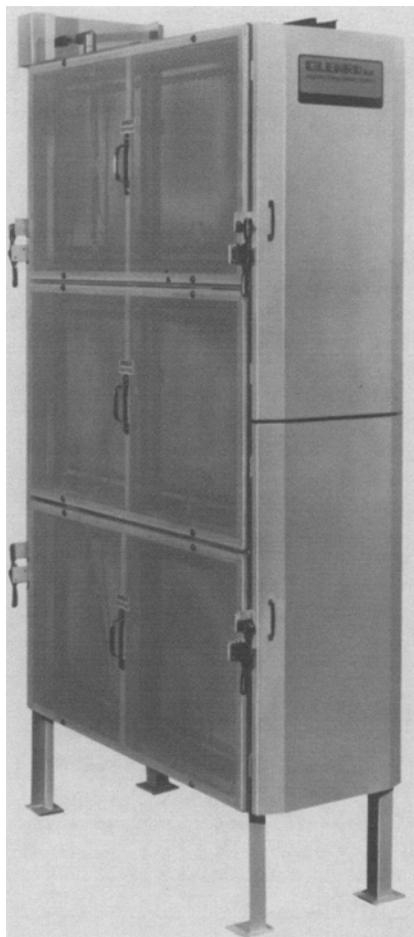
**Dry ice blast cleaning of surfaces** uses small pellets of solid CO<sub>2</sub> to clean compo-

nents. Developed by **Alpheus Cleaning Technologies**, Rancho Cucamonga, CA, the process uses environmentally safe CO<sub>2</sub>, which starts as a solid and turns to an inert gas after contact with the work-piece. The only clean-up is that of the removed dirt/contaminant.

Circle No. (57) on reader service card.

## Heat Treat Hotspot

**Glenro, Inc.**, Paterson, NJ, has released a new **vertical infrared oven** in which the company's Radplane® Series 81 electric



Glenro

infrared heaters are mounted face-to-face. The oven can be used for drying, curing, sintering, fusing, and other web heating applications. Dual-sided heating makes the oven especially effective for drying saturated webs and those coated on both sides. Infrared energy is generated by resistive metal ribbon heating elements mounted on high-temperature insulator backboards. The low thermal retentive elements cool within a few seconds of shutdown, preventing product burning from residual heat. The elements face the product directly for efficient heating. There is no ceramic, quartz, or glass face to inhibit the radiant energy or to retain heat on shutdown. The ribbon elements are corrugated to give greater heating surface per unit area of heater face. Low mass heating elements offer a high conversion efficiency of electrical power input to usable radiant energy, saving power costs. The insulation board reduces back losses. Top, bottom, and side reflector panels direct radiant energy toward the web, further improving efficiency.

Circle (58) on reader service card

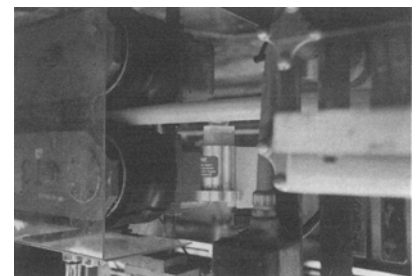
Some new technologies require that experiments be carried out at heating rates of more than 204 K's using high-frequency, plasma, or laser processing. But, because traditional heat treating methods, equipment, and analysis are designed for slow heating of a sample—at about 2-20 k/min.—a researcher may inadvertently miss unknown rapid chemical reactions that occur typically in about one second during rapid intensive heating. Such reactions could result in an explosion. To ex-

plain the micro- and macrokinetics of complex materials and anticipate the problems associated with high-heat, quick response processing, **Elsevier Science Publishers**, New York, NY, has published, "*Thermal Decomposition of Materials/Effect of Highly Intensive Heating*," by O.F. Shlensky, L.N. Aksenov, and A.G. Shashkov.

Of special interest to those dealing with thermodynamics and rate processes, polymer materials, composite materials, chemical kinetics and transfer processes, the book presents physical and mathematical models of thermolysis for reactions that take place in a few seconds to a hundredths of a second.

Circle (59) on reader service card

Extruders and pultruders of three-dimensional pipes, profiles and tubing can improve adhesion of inks, coatings, labels and adhesives with a **3-D plasma treater** from **Enercon Industries Corp.**, Menomonee Falls, WI. The easily installed in-line, Dyne-A-Mite™ plasma treater effectively treats even irregularly shaped



Enercon