Ed Clack has been promoted to Director of Coating Services, Southwest Region, for **Sermatech, International, Inc.**, Limerick, Pennsylvania.

The appointment of ***Gert F. Baumann*** as the new chairman of the **Miles, Inc. Polyurethane Division**, New York, New York, has been announced. He was previously the Division Vice Chairman.

Jeffrey G. Clevenger has been named a new Senior Vice President of **Cyprus Copper Co.**, Denver, Colorado. Clevenger joins Cyprus from Phelps Dodge Corp., where he served as President of Phelps Dodge Morenci mining complex in Arizona.

Recently named President of **Praxair Asia, Inc.**, Danbury, Connecticut, ***Jose L. Travassos*** will be responsible for the company's Asian operations, which include Union Gas Co., Ltd., Korea; PT, Sepanjang Surya Gas, Indonesia; and Iwatani Industrial Gases Corp., a joint venture in Japan. He was previously International Director for Praxair, Inc.

John J. Easton, Jr., has been sworn in by U.S. Secretary of Energy James D. Watkins, as Assistant Secretary for Domestic and International Energy Policy at the **U.S. Department of Energy**, Washington, D.C., He had been General Counsel at DOE.

The ASC Award of the Adhesive and Sealant Council, Inc., Washington, D.C., has been bestowed on ***William E. Leuchten***, Chief Executive Officer, **Essex Specialty Products, Inc.**, for his contributions of original research and significant scientific attainment toward advancing the adhesive and sealant industry, particularly in the areas of automotive glass bonding, auto adhesives, and fast-curing sealants.

Materials and the Environment

In an effort to preserve and maintain the fragile ecology of our planet, these selected abstracts are presented to help readers of ***Journal of Materials Engineering and Performance*** stay current on legislation and compliance with global environmental issues and regulations. They are reprinted from Metals Abstracts and Materials Business File with permission from Materials Information, a joint service of ASM International®, Materials Park, Ohio, and The Institute of Materials, London, England.

July - September, 1992

Ecology in the Anodizing Shop. An overview is given of revised environmental regulations as they affect water-consuming and waste-generating enterprises. The regulations concern packaging materials, water purification, rinsing baths, degreasing, etching, neutralization, anodizing, electrocoloration, densification, recovery of chemicals, and cleaning of waste waters. Reduction of sulfates constitutes the major challenge in the anodizing process, and this challenge requires motivation of all employees.
O. Gretler. Cited: *Oberflache Surface*, 32(8), 1991, 8-12, [in German]. ISSN: 0048-1270. PHOTOCOPY ORDER NUMBER: 199208-71-0184.

Make New From the Old—Avoiding, Rejuvenating and Disposing of Used Foundry Sands According to the Regulations of the Environmental Protection Office. German environmental regulations are reviewed as to their application to used foundry sands. Such sands may become waste products only when they can no longer be used. Some sands containing resins are subject to further regulation. Regulations define that the sands to be disposed of must be sorted according to the metal for which they were used, because of residual metal contents.
A. Schonfeld. Cited: *Maschinenmarkt*, 97, (29), 1991, 34-36, 38-39, [in German]. ISSN: 0341-5775. PHOTOCOPY ORDER NUMBER: 199208-51-1101.

Treatment of An Anodizing Waste to Water-Quality-Based Effluent Limits. Treatability tests performed on anodizing wastewaters demonstrated that hydroxide precipitation was a very effective treatment process for removal of Al, Cu, Ni, and Zn. The tests showed that water-quality-based limits for these metals could be achieved by single-state precipitation consisting of pH adjustment, clarification, and filtration. The optimum pH range for precipitation was 7.0 to 8.0. Because one set of tests showed optimum metal performance at pH values of 7.0 and 9.0, two-stage metal precipitation capabilities were incorporated into the design. Under this arrangement, the first stage would consist of pH adjustment to 9.0, followed by clarification, and the second stage would consist of pH adjustment to 7.5 followed by filtration.
M. Naziruddin, G.C. Patrick, and L. McCune. Cited: *Metal Finishing*, 90, (2), 1992, 69-74 [in English]. ISSN: 0026-0576. PHOTOCOPY ORDER NUMBER: 199208-43-0211.

Waste Management in the Steel Industry—A Suggested Approach. Integrated iron and steel works use approximately 5 to 6 tons of raw materials such as fuel, air, water, and power to produce 1 ton of steel. Almost all the steel produced in India comes from the conventional blast furnace route, where approximately 4 to 5 tons of waste are generated per ton of steel produced. At present, 15 to 20% of these wastes are used in the process of iron and steelmaking and the rest are dumped in the surroundings. The utilization figure in advanced countries is >80%, and in one of the steel plants in Japan, it is 98%. The utilization of waste largely depends on the technology adopted and the quality of raw materials. Such utilization reduces the production cost and ensures a better environment. There is tremendous scope for proper management of wastes in Indian integrated steel works. The nature of wastes and their present and proposed utilization are discussed. The alternate route of steelmaking through direct reduction and the mini steel

plant producers have not been considered. The methodology suggested for waste utilization generated from various processes of conventional integrated steel works can also be selectively used for the alternate routes of steelmaking.

A.K. Saxena and A.P. Roy. Cited: *Journal of the Institution of Engineers (India), Metallurgy and Material Science*, 71, (MMSP), 1991, 77-85, [in English]. ISSN: 0257-4411. PHOTOCOPY ORDER NUMBER: 199208-43-0206.

Implications of the Clean Air Act Amendments of 1990 for The Domestic (US) Coke Industry. Five subject areas relative to the Clean Air Act Amendments (CAA) of 1990 are described. The primary objective of the Clean Air Act is the regulation of air pollution emissions as necessary to protect human health and the environment. The US EPA is authorized and required by the CAA to establish regulations to carry out this objective. Since the last major amendments in 1977, the CAA has remained virtually unchanged. The seven major titles of the CAA amendments include Air Toxics, Acid Rain, Nonattainment Areas, Permits, Enforcement, Mobile Sources and Alternative Fuels, and Stratospheric Ozone and Global Climate. The first five titles contain provisions that are expected to directly or indirectly impact the domestic coke industry. The statutory requirements/implications of each of these provisions are described.

D.C. Ailor. Cited: *Ironmaking Conference Proceedings*, Vol. 50, 1991, [in English]. PHOTOCOPY ORDER NUMBER: 199207-42-0587.

Control of Emissions to Air by Gasblanketing: An Early Example of MACT. Cindu is the only Dutch tar refining plant. Most of the coal tar feedstock originates at a distance of approximately 50 km at the Hoogovens Cokeplants. The first environmental protection laws were effective in 1975 in the Netherlands and Cindu was one of the first industrial facilities made to comply with these laws. A trial emissions control project was commissioned in 1977, and the final system was completed during 1980. The final system contains a vent system to capture the majority of the emissions with the aid of an inert blanketing gas. An exhaust system controls diluted emissions with an excess supply of air. A process gas system then uses high CV emissions as boilerhouse fuel. The primary objective of the emission control system was to reduce the odor problem. Emission reduction has also improved product recovery and improved working conditions for Cindu personnel.

J. Tilma, G. Kokshoorn, and A. Lammers. Cited: *Ironmaking Conference Proceedings*, Vol. 50, 1991, [in English]. PHOTOCOPY ORDER NUMBER: 199207-42-0583.

Commission Recommends Chlorine Phaseout. The United States-Canadian International Joint Commission on Great Lakes Water Quality has recommended phasing out the use of chlorine and chlorine-containing compounds as industrial feedstocks in the Great Lakes Basin. In its Sixth Biennial Report on Great Lakes Water Quality, the commission said that because these substances, which presumably could include polyvinyl chloride, remain in the environment for long periods of time, the chemicals are too dangerous to the biosphere and to humans to permit their release in any quantity. The commission also recommended that the two countries should expand the definition of persistent toxic substances to encompass all toxic substances with a half-life in any medium of greater than 8 weeks, review the use of, and disposal practices for, Pb and Hg and phase out their use where possible, and established a specific limit at which point no source release of any persistent toxic substances will be permitted into Lake Superior or its tributaries.

Cited: *Plastics Engineering*, 48, (6), 1992, [in English]. ISSN: 0091-9578. PHOTOCOPY ORDER NUMBER: 199208-P7-0239.

Plastics Processors Can Heave A Sigh of Relief: EPA Modifies Clean Air Rules. The US Environmental Protection Agency (EPA) has modified the Clean Air Act of 1990, sweeping legislation that requires all major industrial sources of air pollution to have an operating permit. That's good news for the plastics industry: One of the changes will allow processors to change procedures quickly without violating emissions permits. Under the new rule, a company forced to change its production methods can increase emissions by up to 245 tons/year without public notice or hearings. Simultaneously, the company must submit an application for the increase. The EPA has 45 days to accept or reject the increase; states have up to 90 days. The 245 tons combines ceilings for several categories of emissions, including a 40-ton limit for volatile organic compounds, the category most likely to affect processors.

Cited: *Plastics & Environment*, 1992, [in English]. PHOTOCOPY ORDER NUMBER: 199208-P4-0041.

Occupational Exposure to Methylene Chloride; Proposed Rulemaking (57 FR 24438). This notice schedules informal US public hearings concerning OSHA (Occupational Safety & Health Administration) proposal 56 FR 57036 to modify the existing provisions for controlling employee exposure to methylene chloride. The Agency requests that interested parties present testimony and evidence regarding the issues raised by the proposed standard and by this hearing notice. In addition, this notice reopens the rulemaking record so OSHA can receive additional comments regarding the proposed rule. The hearings are scheduled for 16 Sept 1992 in Washington, D.C., and 14 Oct 1992 in San Francisco.

Cited: *Capitol Composite*, 1992, [in English]. PHOTOCOPY ORDER NUMBER: 199208-P4-0040.

ACGIH Reviews Status of Two Chemicals. Epichlorohydrin and vinyl acetate, two chemicals vital to the plastics industry, have recently come under review by the American Conference of Government Industrial Hygienists, Inc. (ACGIH). The ACGIH is an independent organization whose guidelines are considered by many countries, including the US, when establishing regulatory standards. In a decision announced in April, the ACGIH Chemical Substances TLV Committee said it will recommend that a regulation requiring a 20-fold decrease in worker exposure levels for epichlorohydrin be delayed and that the toxicity classification of vinyl acetate be revised. The recommendations, supported by SPI, must be voted for adoption by the ACGIH membership.

Cited: *Plastics Engineering*, 48, (6), 1992, [in English]. ISSN: 0091-9578. PHOTOCOPY ORDER NUMBER: 199208-P4-0039.

Ohio Bill to Have Little Effect on Processors. The coalition formed to defeat Ohio's chemical right-to-know initiative plans to attack the proposal as having little environmental benefit, possibly at great cost to the plastics industry, including processors. Reportedly, processors whose operations may emit trace amounts of some of the listed chemicals, like vinyl chloride monomer in PVC resin, probably would not be affected. The initiative would require Ohio businesses with ten or more employees to provide warnings on products that contain any of 458 chemicals known to cause cancer, birth defects, or other reproductive disorders.

D. Loepp. Cited: *Plastics News (Detroit)*, 4, (18), 1992, [in English]. ISSN: 1042-802X. PHOTOCOPY ORDER NUMBER: 199208-P4-0038.

Environmental Issues: How Regulations Impact Ceramic Manufacturers. The Ceramic Manufacturers Association's (CerMA) Spring Meeting brought together manufacturers, vendors, and other industry personnel for a hard-hitting seminar on environmental regulations and their impact on US Ceramics industries. Presentations dealt with HF emissions, risk analysis, waste handling, storm water control, and hazard communications. The keynote address focused on the current enforcement climate, environmental audits, and other good business practices.

P.A. Janeway. Cited: *Ceramic Industry*, 138, (6), 1992, 66-71, [in English]. ISSN: 0009-0220. PHOTOCOPY ORDER NUMBER: 199208-C4-0001.

Cadmium Getting a Fairer Hearing? EC legislators in Brussels are in the final stages of legislating on the use of Cd pigments in industry. The EC directive has now been published. The bad news, according to reports from the Cadmium Association, is that the Brussels regulators have chosen to ignore the growing weight of evidence that confirms the minimal environmental impact of these additives and their complete safety during both incorporation into polymers and use in products. However, it is noted that the directive does recognize the technical and economic constraints on the use of alternative colorants. The processing temperatures to which colorants, particularly in many engineering thermoplastics, are subjected have limited the introduction of Cd-free colorants. As a result, the directive permits continuing use of Cd pigments in various polymers, and it has delayed implementing the restrictions for many others until 1995.

Cited: *Plastics and Rubber Weekly*, (1436), 1992, [in English]. ISSN: 0032-1168. PHOTOCOPY ORDER NUMBER: 199207-P4-0036.

EPA Deletes Styrene from Carcinogens List. In response to a request by SPI's Styrene Information and Research Center (SIRC), the EPA Office of Health and Environment Assessment in the US has removed its classification of styrene as a probable human carcinogen (B2). SIRC wrote to the EPA requesting that styrene's B2 classification in the agency's Health

Effects Assessment Summary Tables be removed because the information was being misused by many state regulatory agencies, even though the EPA has reached no formal decision classifying the substance. The misuse of the tables has resulted in stringent air emission regulations or proposals in many states, including Colorado, Idaho, Indiana, Kansas, Massachusetts, Minnesota, and New Jersey, SIRC said. In place of a classification, a notation will refer inquirers to a telephone recording explaining that styrene's classification is under EPA consideration.

Cited: *Plastics Engineering*, 48, (5), 1992, [in English]. ISSN: 0091-9578. PHOTOCOPY ORDER NUMBER: 199207-P4-0033.

Labor Proposal Seeks New Limit on Cadmium. Virtually everyone involved in Cd production, 60% of Pb industry employees, 20 to 60% of Cu industry workers, and up to 70% of Zn industry employees are exposed to higher levels of airborne Cd than would be allowed under a new limit proposed by the US Department of Labor. OSHA expects to issue its final rule by Aug 1992 after more than 2 years of public comment and hearings over the proposal. Such a low Cd exposure requirement would force NASA to find a replacement for Ni-Cd batteries now used in the space shuttle and most satellites.

P. Abrahamson. Cited: *American Metal Market*, 100, (92), 1992, [in English]. ISSN: 0002-9998. PHOTOCOPY ORDER NUMBER: 199207-G4-0042.

Photocopies of complete articles are available from the MI Document Service at ASM; please call (216) 338-5151, Ext. 450, for order and price information.

Furthermore...

To meet the increasing demands for quick answers about new environmental technologies, **NETAC, the National Environmental Technology Applications Corp.**, Pittsburgh, Pennsylvania, has introduced a computerized database that can identify alternatives in just minutes. The Environmental Technology and Product (ETAP) database contains ***information on over 1,000 air pollution control, remediation, and treatment technologies*** offered by companies in the US and abroad. It can save users time and money by eliminating the need to review hundreds of separate scientific journals, business publications, and vendor brochures to zero in on promising cleanup options. The process is easy and fast. After callers answer a few questions about their environmental concerns, a NETAC engineer will search ETAP for technologies that represent potential solutions. The search can be guided by a variety of criteria including specific contaminants, media (air, soil, or water), technology principle, geographic limits, commercialization status, or by any combination of these factors. NETAC is a subsidiary of the University of Pittsburgh Trust operating under a cooperative agreement with the US Environmental Protection Agency.

Circle No. (101) on reader service card.

A new class of materials with the unique ability to selectively extract cesium from solutions has potential applications for cleaning up radioactive waste. The materials, called ***silico-titanates, are up to 60 times more efficient in removing cesium from radwaste solutions*** similar to those stored at the Hanford site near Richland, Washington. Use of the materials could lead to easier and safer handling and disposal of radioactive wastes by allowing for separation and removal of most radioactive constituents. According to R.G. Anthony, a **Texas A&M University** chemical engineering professor working with R.G. Dosch, **Sandia National Laboratories**, the unique structure of silicotitanates appears to give them an edge when it comes to reacting with and extracting cesium. They can be fashioned to be highly selective for cesium ions in the presence of chemically similar ions such as sodium. When mixed with radwaste, silicotitanates are believed to combine with cesium in such a way that the cesium atoms are sandwiched between layers in the crystalline material. Spacing between the layers can be controlled through the chemical preparation process to specifically accommodate cesium atoms, but not sodium atoms, which are smaller. Past attempts to remove cesium from radioactive defense wastes have been hampered by the fact that materials used for extraction are unstable in a radioactive environment or do not have a high specificity in the presence of sodium, as both exist in solution as univalent positive ions.

Circle No. (102) on reader service card.

Prepublication Notice: ***"Recycling of Plastic Materials,"*** F.P. La Mantia, Editor, **ChemTec Publishing Co.**, Toronto-Scarborough, Ontario, Canada, ISBN 1-895198-03-8, 1993, 184 pages, 87 figures, and 32 tables. State-of-the-art including analysis of successful industrial practice, production with recycling preplanning, new and practical solutions with major emphasis given to polyolefins, polyethylene terephthalate, PVC, and rubber; other materials included. Stress on urban waste and automotive plastic, particularly films, bottles, packing materials, paper, car batteries, automotive interiors, and tires.

Circle No. (103) on reader service card.

Publication Notice: ***"Materials Interactions Relevant to the Recycling of Wood-Based Materials"*** (Symposium Proceedings), R.M. Rowell, T.L. Laufenberg, and J.K. Rowell, Editors, **Materials Research Society**, Pittsburgh, Pennsylvania, ISBN: 1-55899-161-1, 1992, 305 pages. Explores opportunities to recycle bio-based resources back into paper products or use for the production of fiber-based composites as an alternative to waste.

Circle No. (104) on reader service card.

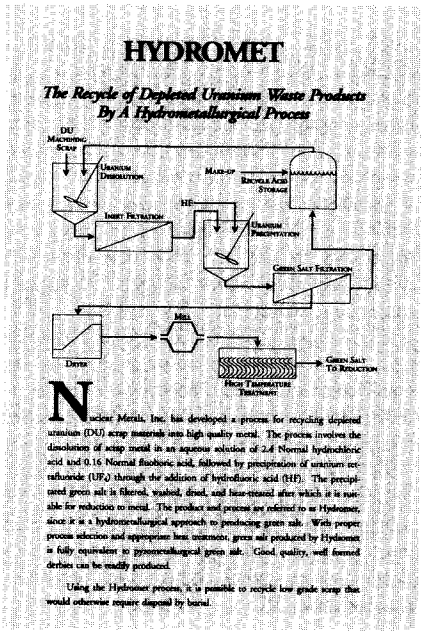
The **Steel Can Recycling Institute (SCRI)**, Pittsburgh, Pennsylvania, announces the creation of a 1-800 recycling information telephone number for consumers. The "Steel Can RecycLine" has been developed to allow callers to access a ***database that contains the names and addresses of more than 8,000 recycling locations in the US that are currently accepting steel cans*** as part of routine materials collection. By calling 1-800-YES (937)-1-CAN (1226) consumers can now talk to a live operator to find out the steel can recycling location nearest to them or receive printed information about steel can recycling. The database system, which is organized by zip code, contains detailed information about curbside collection programs, drop-off sites, buyback centers, and resource recovery facilities that collect steel cans for recycling through the US.

Circle No. (105) on reader service card.

The Clean Air Act Amendments of 1990 mandate that VOCs (volatile organic compounds) cannot be allowed to evaporate into the atmosphere. Instead, they must be destroyed onsite, and in compliance with the MACT (maximum achievable control technology) requirements. This has serious implications for companies involved in coating, painting, or printing. **Fuel and Combustion Technology Inc.**, King of Prussia, Pennsylvania, introduces ***vortex combustion as a highly confined and controlled version of the natural "fire storm" phenomenon and the answer to the problem of destroying VOCs*** on-site. It is particularly economical in small plants and where processes are conducted intermittently, because startup times are short. The system is also suitable for dealing with liquids. It requires less fuel than traditional combustion methods and has a lower capital cost. Equipment is always customized, because every site is different with regard to air flow requirements and the concentration and mix of substances to be eliminated.

Circle No. (106) on reader service card.

Nuclear Metals, Inc., Concord, Massachusetts, has completed construction of a new Depleted Uranium (DU) Recycle Technology Center adjacent to Carolina Metals, Inc., Barnwell, South Carolina. The Recycle Center will ***recover and recycle low-level radioactive waste, minimizing the need for its burial.*** The 70,000 ft^2 facility is capable of demilitarizing obsolete ordnance, providing test range remediation, and decontaminating materials, buildings, and equipment. Services include waste management, site assessment, implementation of remediation programs, and training. It provides for the safe, continuous collection and recycling of low-level radioactive waste and the restoration of government and commercial facilities to environmentally acceptable conditions. Patented and proprietary processes including the chemical extraction of metal, ceramic, and alloy components, along with pyrometallurgical refining, are covered.



Nuclear Metals, Inc.

The **Compressed Gas Assoc.**, Arlington, Virginia, has released its newly revised 1992 video, ***"Safe Handling and Storage of Compressed Gases,"*** with supporting materials. The half-hour program covers recommended safety practices for users, including how to safely store, handle, and use compressed gases in containers. In addition, the video highlights the practices that compressed gas manufacturers follow to ensure that containers are properly filled and transported to their destinations. Classifications of gases and appropriate emergency response procedures are included, as well as current compliance information for DOT, OSHA, and other federal regulations. It may be used for meeting training requirements as outlined by these agencies. A corresponding pamphlet, training guide, test questions, and certification forms are included.

Circle No. (108) on reader service card.

Munters Zeol, Amesbury, Massachusetts, offers a four-page technical paper on advanced rotor concentrators using hydrophobic zeolite. Zeolites are used to ***adsorb VOCs from process air streams and concentrate them into small exhaust streams for cost-effective incineration or recovery techniques***. The paper addresses the adsorptive and materials properties of zeolites, which make them especially useful in abating high-volume, low-VOC concentration applications. It discusses the use of hydrophobic zeolites with honeycomb rotors, in applications such as spray painting, polyethylene extrusion, semiconductor manufacturing, and plant air quality. The text is supported by graphs and illustrations.

Circle No. (109) on reader service card.

A new application bulletin entitled, ***"Granular Activated Carbon for Wastewater Toxicity Reduction,"*** is being offered by **Calgon Carbon Corp.**, Pittsburgh, Pennsylvania. It describes how activated carbon can help to remove toxic organic compounds from wastewaters to meet toxicity requirements of NPDES discharge permits. Performance data from case histories are included.

Circle No. (110) on reader service card.

Effective 18 Sept 1992, the **US Environmental Protection Agency**, Washington, D.C., is ***promulgating significant new use rules (SNURs)*** under Section 5(a)(2) of the Toxic Substances Control Act (TSCA) for the following chemical substances which were the subject of premanufacture notices (PMNs) and some of which were subject to TSCA Section 5(e) consent orders issued by the EPA: propenoate-terminated alkyl substituted silyl ester; ethanol, 2,2'(hexylamino) bis; polyoxy alkylene glycol amine; trimethyl spiro-polyheterocyclic naphthalene compound; substituted spiro oxazine; alkylaryl-substituted phosphate; polymer of substituted aryl olefin; polymer of disubstituted phthalate, dioxoheteropolycycle, and methacrylic acid; halophenyl sulfonamide salt; benzenamine, 4,4'-[1,3-phenylene-bis(1-methylethylidene)]bis[2,6-dimethy l; benzenamine, 4,4'[1,4-phenylenebis (1-methylethylidene)] bis[2,6-dimethyl; ethane, 2-chloro-1,1,1,2-tetrafluoro]. This action requires certain persons who intend to manufacture, import, or process any of these substances for a significant new use to notify the EPA at least 90 days before commencing the manufacturing or processing of the substance for a use designated by the SNUR as a significant new use. The required notice will provide the EPA with the opportunity to evaluate the intended use, and if necessary, to prohibit or limit that activity before it occurs.

Circle No. (111) on reader service card.

Publication Notice: ***"Environmental Dividends/Cutting More Chemical Wastes,"*** by M.H. Dorfman, W.R. Muir, and C.G. Miller, **INFORM**, New York, New York, ISBN: 0-918780-50-0, 1992, 228 pages. The most complete picture to date of source reduction practices in the US organic chemical industry. A follow-up report to the INFORM 1985 survey, which revealed that out of 70,000 chemicals currently in commercial use, only 322 are reported to the US EPA through its Toxics Release Inventory. It is imperative that the generation of waste is curbed. One hundred eighty-one specific source reduction cases are cited, some of which saved plants as much as $2.75 million a year. Source reduction techniques and accomplishments are included, as well as capital

costs, payback periods, annual dollar savings, and percent yield increases. The factors motivating source reduction action are outlined along with plant characteristics and source reduction program features.

Circle No. (112) on reader service card.

Publication notice: ***"Hazardous Materials Shipping Manual,"*** **Adhesive and Sealant Council Inc.,** Washington, D.C., 1992. Full update of the original 1986 publication reflects the US DOT complete revision of HM-181, the Hazardous Materials Regulations. It is specifically designed to assist transportation and distribution personnel in the adhesive and sealant industry to prepare shipments of hazardous materials for transportation by either air, water, rail, or highway. Also included is guidance on the new regulatory mandates for training employees whose occupations include manufacture, handling, preparation and/or packaging, documenting, loading, and transporting hazardous materials. A free copy of DOT's HM-181 regulations and amendments is included, while supply lasts.

Circle No. (113) on reader service card.

Integrated Environmental Services, Danbury, Connecticut, is a comprehensive consulting organization with the ***diverse technologies and resources necessary to solve a wide variety of problems involving hazardous and nuclear materials.*** It applies the most appropriate scientific and engineering technology in a cost-effective manner, while assuring adherence to federal, state, and local regulations, and has the capability of providing responsive and innovative solutions to environmental problems.

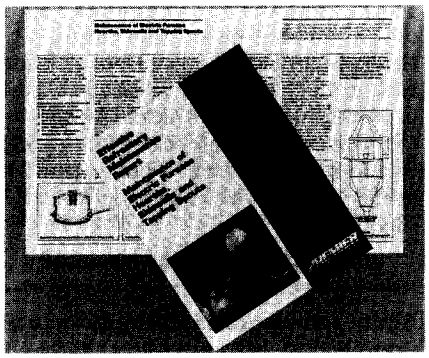
Circle No. (114) on reader service card.

Workshops on ***"Environmental Laws and Regulations,"*** sponsored by the **Office of Environmental Guidance (EH-23)** of the EPA are scheduled at two DOE facilities: Las Vegas, Nevada 23-26 Feb; Washington, DC 16-19 March 1993. The sessions have been updated to reflect changes in federal regulations, DOE orders, and the environmental requirements.

Circle No. (115) on reader service card.

Heat Treat Hotspot

Premier Services Corp., King of Prussia, Pennsylvania, has issued a series of 4-page reports covering effective refractory maintenance procedures for the steel industry. The reports establish some of the ***best possible maintenance practices for electric furnace hearths, sidewalls, and tapping spouts.*** The demand for high production rates from electric furnaces for stainless, alloy, and carbon steels has made this type of protection more important than ever. Preparation procedures, the appropriate refractories, and emplacement equipment are outlined in detail.



Premier Services Corp.

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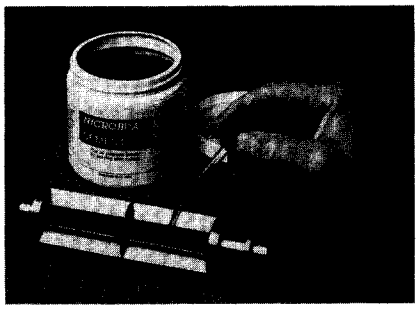
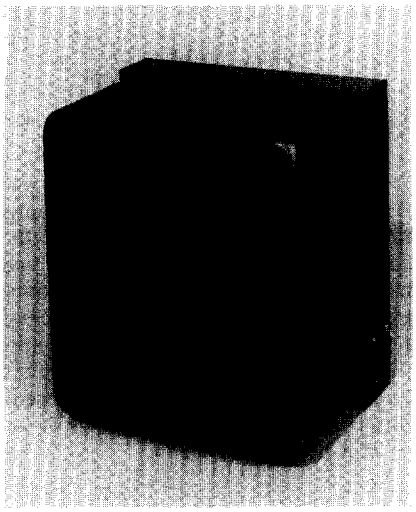


Wall Colmonoy Corp.

Nicrobraz Cement 650, a ***new filler metal binder used in furnace brazing operations,*** is available from **Wall Colmonoy Corp.,** Madison Hts., Michigan. This low-viscosity liquid is mixed with brazing filler metal powders to permit easy application by brush, eyedropper, syringe, or spray system. The binder completely volatilizes below 540 °C (1000 °F), leaving no residue, and may be used in vacuum or high-purity dry atmospheres. The binder is nontoxic, nonflammable, and contains no ozone-depleting solvents.

Circle No. (117) on reader service card.

A compact ***protection device that reduces field installation time and expense on gas-fired combustion equipment,*** such as furnaces and ovens, is available from **Protection Controls, Inc.,** Skokie, Illinois. The MINI-UNIFIED, with an optional purge control, costs less and takes less space than separate, externally-mounted and inter-wired components. The device combines the flame safeguard with prewired pushbuttons and indicating lights. The hard-wired unit with plug-in interchangeable relays is more rugged than printed circuit designs under harsh



Protection Controls, Inc.