



In the effort to preserve and maintain the fragile ecology of our planet, these recently selected abstracts are represented to help readers of the *Journal of Materials Engineering and Performance* stay current on legislation and compliance with global environment 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.

Firms Hail, Bemoan EPA's Acetone Ruling. Acetone, a chemical used in several plastics manufacturing processes, has been removed from the U.S. Environmental Protection Agency's list of volatile organic compounds and its toxic release inventory. The EPA said the versatile industrial cleaner, traditionally used in processing unsaturated polyester resins and fiberglass-reinforced plastics, would be removed from the lists. The "de-listing" is a double-edged sword—applauded by companies that are heavy users, but lamented by firms that have developed alternatives to acetone. R. King. Cited: *Plast. News (Detroit)*, Vol 7 (No. 17), 26 June 1995, p 8 [in English]. ISSN 1042-802X. PHOTOCOPY ORDER NUMBER: 199509-D4-0012.

Studies Fill Holes in Emissions Data. Emissions control is one of the major challenges facing foundries today. With the U.S. 1990 Clean Air Act Amendments (CAAA) and Maximum Achievable Control Technologies (MACT) standards scheduled to take effect in 2000, the industry has had to speed up the pace of its emissions control. Foundries have had a hard time with this subject though, mainly because the industry has never done a complete inventory of all its pollutants. A Wisconsin study of benzene and formaldehyde emissions is described. Also, the Foundry of the Future Project, sponsored by CERP (Casting Emission Reduction Program), which is designed to improve and/or develop materials and processes in foundry technologies to allow the U.S. casting industry to be competitive while working to achieve a zero effect on the environment is discussed. D.L. Holic and M.L. Philbin. Cited: *Mod. Cast.*, Vol 85 (No. 8), Aug 1995, p 42-43 [in English]. ISSN 0026-7562. PHOTOCOPY ORDER NUMBER: 199510-G4-0088.

Pennsylvania Passes Legislation To Ease Brownfield Redevelopment. A welter of environmental cleanup and liability laws has hindered redevelopment of U.S. Steel's National Tube Works in McKeesport, Pennsylvania, and scores of other heavy-industrial sites in Pennsylvania and across much of the U.S. Rust Belt. Rather than promote cleanup and rehabilitation, the laws discourage reuse and keep tracts of valuable real estate empty. But new Pennsylvania laws are intended to change that by removing the uncertainty over environmental liability and establishing clear cleanup standards for brownfield sites. The laws took effect in mid-July 1995. Cited: *New Steel*, Vol 11 (No. 8), Aug 1995, p 10-11 [in English]. ISSN 0897-4365. PHOTOCOPY ORDER NUMBER: 199510-S4-0050.

Advanced Approaches to Title V Permits. U.S. steelmakers can control much of the Title V permit process if they know the system. Like many of the U.S. Clean Air Act rules, the U.S. Title V operating permit rules are cluttered with merciless legalese, jargon and undefined terms, references, and cross references, as well as vague procedures. However, the regulations sometimes allow room for creative, flexible, and less costly solutions to environmental problems. Less costly alternative strategies can meet Clean Air Act requirements, but do not expect the agency to develop them for you. R.V. Chalfant and R.R. Geddis. Cited: *Iron Steelmaker*, Vol 22 (No. 8), Aug 1995, p 25-29 [in English]. ISSN 0275-8687. PHOTOCOPY ORDER NUMBER: 199510-S4-0051.

Proposed EPA Rules Assailed. U.S. plastics industry representatives lobbied in Washington on 21 July 1995 against new rules aimed at prevent-

ing accidental releases of hazardous chemicals in the air under section 112 of the 1990 amendments to the Clean Air Act. Mary McConnell, vice president, environmental and regulatory affairs, for Genmar Industries in Minneapolis, Minnesota, testified on behalf of thermoset-using boat builders. She noted that only small increases of styrene, a listed chemical, during the boat-building process could trigger large penalties under the proposed Environmental Protection Agency rule. R. King. Cited: *Plast. News (Detroit)*, Vol 7 (No. 22), 31 July 1995, p 6 [in English]. ISSN 1042-802X. PHOTOCOPY ORDER NUMBER: 199510-P4-0072.

Shell Awaits Decision on Dutch Tax Level. Shell Nederland Chemie is still waiting for a reply from the Dutch transport minister after writing on 22 May 1995 to warn the company's epoxy resins plant could be forced to close if a proposed tax on discharges of halogenated effluent goes ahead. According to Shell, such a tax would cost the company Dfl 6 million/year (\$3.82 million/year). This would jeopardize the Dfl 50 to 60 million investment program earmarked for the plant. The proposed tax has been approved by parliament and is scheduled to come into force at the beginning of 1996. Cited: *Eur. Chem. News*, Vol 63 (No. 1673), 26 June-2 July 1995, p 20 [in English]. ISSN 0014-2875. PHOTOCOPY ORDER NUMBER: 199509-P4-0063.

Secondary Pb/Zn Reacts against Basel. The secondary lead and zinc sector feels that it has been unfairly treated in the Basel Convention on transfrontier shipments of waste materials, as well as EU and OECD legislation. The smelters are looking for a more direct system of recycling that would enable free movement of material to those producers implementing certain controls and achieving certain standards, such as BS750 and its equivalent. The gap between the industry and the bureaucrats, and between those bureaucrats representing industry and those from the environmental legislative sector, appears to be widening. R. Carnac. Cited: *Met. Bull.*, Vol 7991, 26 June 1995, p 12 [in English]. ISSN 0026-0533. PHOTOCOPY ORDER NUMBER: 199510-G4-0091.

Environmental Cleanups—Who Pays? Growing concern over environmental standards in industry is causing much discussion over the responsibility for financing cleanup operations. The U.S. Superfund has proved to be very expensive but unsuccessful and is being reformed. The European Union still needs to agree on a policy for handling cleanups, many of which are necessary in former East Germany. A number of agencies, including the World Bank, European Bank for Reconstruction and Development, Inter-American Development Bank and Agency for International Development, are involved in financing cleanup programs around the world. A. Broad. Cited: *Met. Bull. Mon.*, Vol 296, Aug 1995, p 18-19, 21 [in English]. ISSN 0373-4064. PHOTOCOPY ORDER NUMBER: 199510-G4-0094.

Two Metallic Winners in the Autocat Race. Recovering automotive output has given rise to a strong demand for Pt and Pd in 1994 for autocatalysts. Platinum is firm at ~\$400.00/oz, while Pd is heading for \$200.00/oz. Palladium demand has increased fast in Europe as car makers have switched to Pd catalysts. Development of Pd/Rh catalysts will lead to a displacement of Pt/Rh from this market in the European market. However,

the growth for Pd in the petrol engine market will be balanced by the growth of Pt in the diesel engine market. Hence, both metals will continue to benefit from the continued growth of this sector.

J. Eley. Cited *Met. Bull. Mon.*, Vol 295, July 1995, p 46-47, 49, 51 [in English]. ISSN 0373-4064. PHOTOCOPY ORDER NUMBER: 199510-G8-0753.

Great Lakes Water Challenge Continues. New guidelines issued in March by the Environmental Protection Agency seek to restore the damaged ecosystem of the Great Lakes, which holds 95% of the fresh water in the United States and 20% of the global fresh water supply. As welcome as the EPA guidelines are by some, though, they are still seen by many metals executives in Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, USA, as a threat to the industry. Basically the guidelines call for starting programs to reduce types and amounts of toxic chemicals and other pollutants released into the Great Lakes.

L.M. Cohn. Cited: *Am. Met. Mark.*, Vol 103, 13 Sept 1995, (Suppl. Steelmaking), p 10-11 [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199512-S4-0064.

PNG Signs Ok Tedi Compensation Agreement. The Papua New Guinea government and its partners in the Ok Tedi copper/gold mine have signed a compensation agreement aimed at ending a \$4 billion environmental damages claim by landowners living along the Ok Tedi and Fly rivers. The PNG cabinet has also approved draft enabling legislation that includes controversial provisions making it a criminal offense for any person to sue the mine for further compensation for environmental damages. The landowners' Australian lawyers, Slater & Gordon, described the draft legislation with its penalty clauses as "draconian and unprecedented," and claimed it was drafted by BHP's lawyers in Melbourne.

Cited: *Platt's Met. Week*, Vol 66 (No. 33), 14 Aug 1995, p 4 [in English]. ISSN 0026-0975. PHOTOCOPY ORDER NUMBER: 199511-G4-0106.

Environmental Rules Hindering Recycling. Mounting paperwork and tighter restrictions are discouraging secondary lead and zinc producers internationally from cross-border trade of raw waste materials, impeding recycling levels. The Basel Convention, introduced by the Organization for Economic Cooperation and Development to control cross-border movements of hazardous waste, is a thorn in the recycling industry's side. Secondary Pb and Zn companies say the basic principle behind the convention is sound, but in practice it has made it more difficult and time-consuming to export and import material to feed plants around the world.

Cited: *Am. Met. Mark.*, Vol 103 (No. 131), 11 July 1995, p 6 [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199509-G4-0083.

AIISI, Two Others Hit EPA on Great Lakes. The American Iron and Steel Institute recently filed a petition with the U.S. Circuit Court of Appeals in Washington, D.C., asking for the right to review final rulemaking written to guide future water-quality issues in the Great Lakes area. Similar suits also were filed against the Environmental Protection Agency by the Association of Metropolitan Sewerage Agencies and the Great Lakes Water Quality Coalition. The steel group essentially wants another shot at amending the recently enacted Great Lakes Initiative (GLI) rules before they are implemented by the EPA.

Cited: *Am. Met. Mark.*, Vol 103 (No. 136), 18 July 1995, p 6 [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199509-S4-0048.

EPA Removes Three Chemicals from TRI List. Steel and nonferrous metal plants may be able to report somewhat lower toxic-emission statistics following the U.S. Environmental Protection Agency's rejiggering of pollution monitoring requirements. The EPA recently announced final rules removing sulfuric acid, acetone, and ammonium sulfate from its list of "Toxic Release Inventory" (TRI) monitoring requirements. The final rules represent changes in the TRI program, which requires companies across the U.S. to monitor and report their emissions of numerous pollutants.

B. Schmitt. Cited: *Am. Met. Mark.*, Vol 103 (No. 136), 18 July 1995, p 6 [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199509-S4-0049.

EPA Favors Dissolved Metals as Gauge of Water Quality. The measurement of dissolved metal, rather than total recoverable metal, continues to gain ground as the U.S. Environmental Protection Agency's preferred method of expressing and implementing water quality criteria for nickel and ten other metals. On 4 May 1995, EPA issued an interim final rule modifying its National Toxics Rule (NTR) to move dissolved metals

ahead of total recoverable metals as a measure of aquatic bio-availability. Many participants in the metals industry have long contended that total recoverable metal in the water column is a less accurate gauge of risk to aquatic organisms than is dissolved metal.

Cited: U.S. Environmental Protection Agency. *Communique*, Vol 17, June 1995, p 5 [in English]. ISSN 1181-7208. PHOTOCOPY ORDER NUMBER: 199509-G4-0085.

Asian Steel Mills Fight Scrap Trade Ban. In 1994, the amount of ferrous scrap collected in Indonesia and Thailand totaled 1.6 million tonnes and is increasing yearly. Member mills of the Southeast Asia Iron and Steel Institute are to ask their respective governments to agree that such scrap is no longer to be considered a hazardous waste. Scrap has an important role for the region's economic development.

A. Low. Cited: *Met. Bull.*, Vol 7982, 25 May 1995, p 12 [in English]. ISSN 0026-0533. PHOTOCOPY ORDER NUMBER: 199510-S2-0354.

EU Water Directive Worries Copper Industry. A revised European Commission drinking water directive proposes to reduce the parametric value of Cu in water from 3 to 2 mg/L and lead from 50 to 10 mg/L, the latter in line with World Health Organization guidelines. The European Cu industry is contesting the need for the tighter Cu control and its scientific basis, but the EU points to the stricter U.S. EPA Cu standard for drinking water of 1.34 mg/L.

Cited: *Met. Bull.*, Vol 7988, 15 June 1995, p 6 [in English]. ISSN 0026-0533. PHOTOCOPY ORDER NUMBER: 199509-G4-0087.

EFs Eye New Rules on Radioactive Dust. A proposal to give electric furnace steel mills more leeway in the disposal of radioactive waste is advancing in the U.S. federal bureaucracy. It might be in effect by year's end. The tentative plan to allow easier disposal of certain kinds of contaminated dust and other mill wastes is percolating through the Nuclear Regulatory Commission and the Environmental Protection Agency. The NRC has prepared a draft "technical position." If certain emission control dust and other "incident-related materials" showed radioactivity 100 picocuries/g, they could be treated and sent to an authorized hazardous waste site.

B. Schmitt. Cited: *Am. Met. Mark.*, Vol 103 (No. 158), 17 Aug 1995, p 1, 6 [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199511-S4-0063.

Chlorinated Solvents—The Continuing Debate. The chlorine debate continues unabated, resulting in significant implications for those organizations using chlorinated solvents in metal cleaning and degreasing applications. The key issues driving legislation today include toxicology, atmospheric chemistry, waste, water contamination, and global warming. These issues continue to attract the attention of regulators, not only in the United Kingdom and European Union but worldwide. U.K. companies operating a metal degreasing operation have come under increasing scrutiny. The major environmental legislation affecting U.K. companies is encompassed within the Environmental Protection Act 1990 (EPA). In addition, the Montreal Protocol and subsequent European regulations that deal with the phase out of CFCs and the impending 1 Jan 1996 phase out of 1,1,1-trichloroethane, have also had a far-reaching effect on many companies' cleaning operations.

P. Herbert. Cited: *Finishing*, Vol 19 (No. 8), Aug 1995, p 22-24 [in English]. ISSN 0309-3109. PHOTOCOPY ORDER NUMBER: 199512-G7-0285.

"Poison Pills" Sour Outlook for PNG Gold Mine. A detailed account is given of the continuing controversy over the large Ok Tedi copper-gold mine project in Papua New Guinea, managed by Australia's Broken Hill Proprietary company, which has come up against allegations from local villagers that mine waste pumped into rivers has devastated their livelihoods. The company claims that all obligations under PNG law have now been met. A large liability claim was filed in the Melbourne courts in 1994 on behalf of local landowners, and Ok Tedi finally agreed to pay some of it as compensation. The deal was made with the PNG government, and if the poison pill legislation is passed severe financial penalties will be imposed on anyone who continues the legal fight.

N. Tait. Cited: *Financ. Times*, 25 Aug 1995, p 21 [in English]. PHOTOCOPY ORDER NUMBER: 199512-G4-0111.

Connecticut [USA] Compounder Looks To Resolve Suits. Officials of Polymer Resources Ltd agreed to settle two of their three pending lawsuits against a planning and zoning commission in Farmington, Connecticut, USA, where the company operates a resin-compounding facility.

The town and the Stamford, Connecticut-based company still appear likely to head to trial over the third suit, which involves the firm's plan for an air-handling system to alleviate neighborhood complaints about odors from the factory. In settling the suits, Polymer Resources agreed to remove a third flagpole and not to move a trash compactor to the front of its building. Polymer Resources also agreed to remove light fixtures that illuminate the flagpoles.

C. Goldsberry. Cited: *Plast. News (Detroit)*, Vol 7 (No. 34), 23 Oct 1995, p 17 [in English]. ISSN 1042-802X. PHOTOCOPY ORDER NUMBER: 199512-P4-0076.

Stronger Ocean Dumping Enforcement Urged. Federal agencies and states should do more to enforce laws restricting ocean disposal of solid wastes by marine vessels, according to a National Research Council study. Eight years after the Senate ratified an international agreement on the disposal of trash from ships, large amounts of debris still wash up on the nation's coasts the council said. More than 840,000 tons of garbage is generated each year by oceangoing vessels, which include cargo, cruise and U.S. Navy ships, and commercial fishing and recreational boats. While the extent of ships' contribution to marine pollution is uncertain, Coast Guard

officers often find no trash, separated plastics, or incinerator ash on ships that obviously produce large amounts of garbage. Only a minority of ships dispose of their waste at port facilities.

S. Daniels. Cited: *Plast. News (Detroit)*, Vol 7 (No. 34), 23 Oct 1995, p 26 [in English]. ISSN 1042-802X. PHOTOCOPY ORDER NUMBER: 199512-P4-0077.

State Agency Supports Bayou. The Tennessee Air Pollution Control Board has ruled that the United Steelworkers union does not have legal grounds to challenge an air permit granted to Bayou Steel Corp's new Harriman, Tennessee, USA, rolling mill by the Tennessee Department of Environment and Conservation. The board dismissed the USW's appeal to the permit at the request of the state environmental agency and Bayou Steel. USW Local 9121 has been on strike against Bayou Steel's mini-mill in LaPlace, Louisiana, since 21 March 1993, when 300 employees walked off the job.

S. Robertson. Cited: *Am. Met. Mark.*, Vol 103 (No. 180), 19 Sept 1995, p 2 [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199512-S4-0067.

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Phibro-Tech, Inc. has developed a *thiourea-free alkaline etchant, which is compatible with tin lead and aqueous dry film resist*. It does not contain any substances which are carcinogenic and can be used with all etching systems. It provides a broad pH operating range and reduced undercut or lateral etch of copper circuitry. For further information, contact Phibro-Tech Inc., One Parker Plaza, Fort Lee, NJ 07024; tel: 201/944-6000; fax: 201/944-7916.

Climax Research Services has received a Small Business Innovation Research Phase I Award from the U.S. Environmental Protection Agency. This award will help Climax *to develop a technique for converting hazardous chromium plating sludge waste into a commercially viable aluminothermic grade chromium metal*. For further information, contact Climax Research Services, 39205 Country Club Drive, Farmington Hills, MI 48331; tel: 810/489-0720; fax: 810/489-8997.

Plasma technology is being investigated as a way to eliminate sources of smog and corrosive acid rain at the National Science Foundation and the Electric Power Research Institute. The challenge is to develop plasma generators that will convert toxic emissions into benign or more treatable products quickly, safely, and economically. **The University of Illinois at Urbana-Champaign** is developing computer models to determine how well plasma generators can do the job and is investigating using *a plasma directly in the exhaust to eliminate pollutants from diesel engines*.

Owens-Corning has developed *an S-2 glass reinforced catalytic filter that promises increased efficiency and cost savings to the power generation market*. The filter relies on a catalytic coating to reduce oxides of nitrogen from power plant emissions. The coating is a combination of vanadium oxide and titanium oxide,

which creates a chemical reaction when ammonia is added to the emission stream. The result is a harmless combination of water vapor and nitrogen. The filter removes from 80 to 95% of nitrogen oxides from plant emissions.

Roy F. Weston, Inc. and **Remote Sensing Air, Inc.** have established a joint venture *to provide optical remote sensing to measure air contaminants for industry*. Optical remote sensing technology allows real-time measurement of multiple air pollutants along a path up to one kilometer in distance. The state-of-the-art measurement technology is designed for fence-line monitoring and emissions evaluations for industrial facilities, landfills, hazardous waste site clean-ups, ambient air quality, and industrial hygiene evaluations. For further information, contact Roy F. Weston, Inc., 1 Weston Way, West Chester, PA 19380-499; tel: 610/701-3680; fax: 610/701-3124.

A process developed by **The Plasphalt Project Ltd.** uses *recycled plastic to substantially improve the strength of asphalt roads*. The mixture of recycled plastics suitable for the process requires no sorting and includes types that are currently unusable on other processes. Most of the plastics end up in landfills even after being separated and collected. Tests show a 50% increase in the strength of road materials made by using the new process. The New Mexico State Highway Department has expressed interest in the process and is currently conducting laboratory verification tests on the material.

Van Nostrand Reinhold has published *Safety and Health Management in the Nineties*, which helps mid-sized industrial firms devise a solid safety and health program to minimize on-the-job accidents. The book contains examples, checklists, and summaries for writing safety policy, preventing and controlling hazards, etc. To order, call 800/842-3636.