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CADMIUM WASTES FROM MILITARY COATING MATERIALS

APR 12 1990

Mr. Erik Hoygaard  
State Pollution Control Authority  
Statens forurensningstilsyn  
P.O. Box 8100 Dep.  
N-0032  
Oslo 1, Norway

Dear Mr. Hoygaard:

Thank you for your March 27, 1990, letter (ref. 90/2887-1 682.031/2) asking for our assistance in identifying Federal regulations applicable to cadmium wastes resulting from coating materials and (spent) sacrificial anodes generated by military operations.

One of the Waste Management Division's (WMD) tasks is to support the EPA's Office of Solid Waste to develop Federal regulations that set standards for the storage, treatment, and disposal of wastes deemed hazardous under Subtitle C of the Resource Conservation and Recovery Act, (RCRA), P.L. 1976.

EPA has promulgated in the 40 Code of Federal Regulations (CFR) Part 261 a criteria listing particular industrial or nonspecific source industrial wastes as hazardous under RCRA. The wastes generated by the military operations described in your letter are likely to generate wastes meeting the listing criteria for electroplating wastes, heat treatment, aluminum conversion coating (F006, F019, F007, F008, F009, F010, F011 and F012) or characteristic wastes for cadmium (Extraction Procedure Toxicity Test level of 1.0 mg/l, referred by EPA as EP Tox for cadmium). Enclosure 1 is a copy of pages from the 40 CFR Part 261 describing these wastes.

Another responsibility of the WMD is to set treatment standards that allow the placement of hazardous wastes in land disposal units such as landfills, underground injection wells, or surface impoundments. These treatment levels can be expressed as maximum concentrations of specific hazardous constituents or a

requirement to use one or various treatment technologies. EPA promulgates in the 40 CFR Part 268 land disposal restrictions which include said treatment standards. Enclosure 2 is a speech entitled: "EPA's BDAT Development for the Land Disposal Restriction Program," which provides a detailed review of the legal and engineering technical framework for the development of treatment standards.

On June 23, 1989, (see enclosed 54 Federal Register (FR), 26649) EPA promulgated treatment standards for electroplating wastes. Cadmium is one of the regulated metal constituents in the electroplating wastes. Nonwastewater forms of the electroplating wastes must meet a treatment standard for cadmium of 0.066 mg/1 (as measured by the Toxicity Characteristic Leachate Procedure (TCLP) test). This treatment standard is based on stabilization of F006 wastes. EPA did not regulate cadmium in wastewater forms of the electroplating wastes because when these treatment standards were promulgated, EPA lacked data for the treatment of cadmium in electroplating wastewaters.

EPA is currently reviewing data documenting technical difficulties found with the available analytical test methods to comply with the free and total cyanide standards for electroplating wastes. The review of these analytical test data can result in revisions to the promulgated treatment standards or to the analytical test methods currently being used. Enclosure 4 is an EPA document entitled "Best Demonstrated Available Technology (BDAT) Background Document for Cyanide Wastes," discussing EPA's engineering technical rationale and summarizing the data supporting the promulgation of treatment standards applicable to electroplating wastes.

On May 8, 1990, EPA will be promulgating treatment standards applicable to all characteristic wastes. These final treatment standards follow up the enclosed November 22, 1989, 54 FR 48372. This letter does not provide a discussion of the final rule, but instead an overview of the proposed rule. The November 22, 1990, Notice proposed several regulatory options for the development of treatment standards for D006 wastes. The proposal identified three subcategories of D006 wastes: wastewaters, nonwastewaters, and cadmium containing batteries.

For wastewater forms of D006, EPA proposed two regulatory options. One option is to set a treatment standard of 0.20 mg/1

cadmium based on chemical precipitation followed by filtration. The other option is to set a treatment standard of 1.0 mg/1 cadmium based on the characteristic level, as measured by TCLP or EP Tox.

For nonwastewater forms of D006, EPA proposed two regulatory options. One is to set a treatment standard of 0.14 mg/1 (as measured in the extract by the TCLP) based on stabilization. The other one is to set a treatment level of 1.0 mg/1; based on the characteristic level for cadmium wastes, as measured by TCLP or EP Tox.

For nonwastewater forms of D006 belonging to the cadmium containing battery subcategory, EPA proposed the use of thermal recovery of cadmium as prerequisite for disposal. Wastes resulting from the thermal furnaces, e.g., clinkers or slags, would not be prohibited from land disposal. However, wastes resulting from the treatment of air pollution control devices would be required to meet the wastewater and nonwastewater treatment standards for D006; discussed in the above two paragraphs, as a prerequisite for land disposal.

In your letter, you also asked if EPA has taken into consideration the use of any substitutes for cadmium as an anticorrosive-coating alloy. To the best of my knowledge, EPA has not reviewed any data pertinent to the use of metal substitutes for cadmium in coating operations. However, Jose E. Labiosa of my staff has requested from Infoterra a literature search on this matter. Infoterra is an EPA's Library service that had access to databases which include technical publications, research papers, hazardous waste treatment articles and State and Federal regulations focusing on environmental problems such as those described in your letter. It is our understanding that Infoterra will mail to you any information available in our database. Enclosure 5 is a brochure describing Infoterra services.

If you should have any questions, please contact Jose E. Labiosa at (202) 382-4496 for assistance. Jose is a senior chemical engineer who has valuable experience in hazardous waste treatment. Also, he is responsible for the development of final treatment standards applicable to D006 wastes.

I would like to wish you a lot of success in your regulatory

efforts to reduce the discharges of cadmium to the North Sea.

Sincerely,

Original Document signed

David Bussard  
Acting Director  
Waste Management Division

Enclosures (5)

cc: Keith Chanon, Infoterra