

US EPA ARCHIVE DOCUMENT

DCN FLEP-00077

COMMENTS Brown and Caldwell

SUBJECT DATA2

COMMENT The EPA has expressed concerns regarding mercury emitted into the air, depositing on surface water and thereby threatening human health and the environment. Client shares these concerns and believes that utilizing the crusher is the most adequate and "environmentally friendly" method of managing its mercury waste from light tubes. The following is the procedure by which the tubes are crushed and the mercury disposed of: Light tubes are inserted into the crusher one at a time. When the tube is crushed, the mercury that is emitted is absorbed by a carbon filter in the fully-enclosed unit. Enclosed as Exhibit A are the test data specifications for the filters. [See hard copy of Comment FLEP-00077 for Attachments] Additionally, Client used the TCLP for the crushed glass resulting from this method and found that the crushed glass contained less than .2 milligrams per liter mercury. When the filter reaches its capacity, it is easily removed from its housing in the crusher, placed in a plastic wrap bag and then into a drum for disposal as hazardous waste. Client contends that this method not only addresses EPA's concerns regarding air emissions from breakage (in a significantly more efficient manner than transporting whole tubes), but it also reduces the volume of waste in landfills because more crushed glass than whole light tubes fit into 55-gallon drums. Additionally, the majority of the mercury present is handled as hazardous waste and less mercury actually goes to the landfill. EPA's data showed as much as 6.6 percent of mercury could be released in the area from a lamp broken during collection, storage and transportation of lamps. Crushing tubes in this manner prevents mercury from volatilizing to the air and being transported through the environment.

RESPONSE

The Agency appreciates the commenter's submission of additional information addressing issues pertaining to crushing of hazardous waste lamps.

The current universal waste rule prohibits universal waste handlers from treating universal wastes (40 CFR ' 273.11 and 273.31). The final rule for hazardous waste lamps retains the treatment prohibition for universal waste handlers and applies the prohibition to handlers of hazardous waste lamps. The definition of treatment under RCRA includes Any method, technique, or process...designed to change the physical, chemical, or biological character or composition of any hazardous waste, so as to neutralize such waste, or so as to recover energy or material resources

from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.® The crushing of hazardous waste lamps clearly falls within the definition of treatment under RCRA (40 CFR 260.10).

Some commenters to the proposed hazardous waste lamps rule requested that the Agency allow generators of such lamps to crush them on-site before sending them off-site for treatment or disposal. However, as explained in the preamble to the final universal waste rule (60 **FR** 25519), the Agency believes that it is not appropriate to allow universal waste handlers to treat universal wastes because the handlers are not required to comply with the Subtitle C hazardous waste management standards for generators (40 CFR Part 262). These hazardous waste generators must obtain EPA identification numbers, are subject to the 90-day (or 180-day) accumulation limit, and must comply with the technical standards of 40 CFR Part 265 for storage and accumulation units. Because these standards are relatively stringent, EPA's policy is that generators may treat hazardous wastes on-site, provided that they comply with all applicable requirements of 40 CFR Part 262 for storage and accumulation of hazardous wastes.

Universal waste handlers, on the other hand, are provided a much longer accumulation time limit of one year and need not comply with specific technical standards for accumulation and storage units. Instead, they are subject only to the general performance standard of managing universal wastes in a manner that prevents releases® to the environment. In addition, information available to the Agency on drum top crushing systems for lamps indicates that these units may allow significant air emissions of mercury, particularly when the units are not in operation, and emissions often may exceed the OSHA limit of 0.05 mg/m³.

For these reasons, the Agency is not allowing crushing of hazardous waste lamps under federal regulations. However, generators located in a state with an authorized universal waste program may be allowed to crush universal waste lamps, if within the state authorization process the Agency determines that a state's program allowing generators to treat lamps under controlled or restricted conditions is equivalent (per RCRA ' 3006) to the federal prohibition. EPA believes that this approach both ensures protection of human health and the environment while allowing for state regulatory programs that include specific standards for the safe crushing of hazardous waste lamps.

DCN FLEP-00169

COMMENTER Advanced Environmental Recycling Corp.

SUBJECT DATA2

COMMENT The Universal Waste option not only provides generators of lamps with regulatory relief, but also minimizes mercury release concurrently. Based on both qualitative and quantitative analyses conducted by AERC/MTI, it is evident that there is substantial amount of mercury released both instantaneously as

vapor and throughout the transportation, storage, and landfill operational processes with mercury adhering to powder, glass, and end caps. Details of the instantaneous release of mercury vapor from broken fluorescent lamps is included in Exhibit 1.

RESPONSE

The Agency appreciates the commenter's submission of additional data addressing issues pertaining to hazardous waste lamp management. The Agency considered the additional data submitted by commenters in the development of its model on mercury emissions. On July 11, 1997 (62 *FR* 37183) the Agency made available to the public additional data on mercury emissions from the management of spent lamps. The information provided as part of the Notice of Data Availability consisted of an electronic model and a report that provide an assessment of mercury emissions from the management of mercury-containing lamps under different regulatory approaches. The final report, *Mercury Emissions From the Disposal of Fluorescent Lamps*,[@] discusses the methodology, data and assumptions used in developing the Mercury Emissions Model. The report describes inputs used in the model for estimating potential mercury emissions during waste management and disposal activities (e.g., lamp properties, lamp disposal rates, and lamp mercury emissions rates from specific waste management practices).

DCN FLEP-00309

COMMENTS Bethlehem Apparatus Company

SUBJECT DATA2

COMMENT 2. Release of Mercury Vapor Due to Breakage, p.38,239.

Bethlehem has no data which disputes EPA's estimate that 6.6% of the mercury content of a Lamp is lost to vaporization during breakage. The only practical data Bethlehem has to offer is that the filters used as part of the crusher device are replaced after crushing 2,500 Lamps. Attempts at calculating a mass balance on this issue were unsuccessful.

RESPONSE

The Agency appreciates the commenter's submission of additional data addressing issues pertaining to mercury-containing lamp management. The Agency considered the additional data submitted by commenters in the development of its model on mercury emissions. On July 11, 1997 (62 *FR* 37183) the Agency made available to the public additional data on mercury emissions from the management of spent lamps. The information provided as part of the Notice of Data Availability consisted of an electronic model and a report that provide an assessment of mercury emissions from the management of mercury-containing lamps under different regulatory approaches. The final report, *Mercury Emissions From the Disposal of Fluorescent Lamps*,[@] discusses the methodology, data and assumptions used in developing the Mercury Emissions Model. The report describes inputs used in the model for estimating potential mercury emissions during waste management and disposal activities (e.g., lamp properties, lamp disposal rates, and lamp mercury emissions rates from specific waste management practices).