

Association of State and Territorial

ASTSWMO

Solid Waste Management Officials

Fluorescent Lamp Drum-Top Crusher Survey Results



Conducted by the ASTSWMO Hazardous Waste Recycling Task Force

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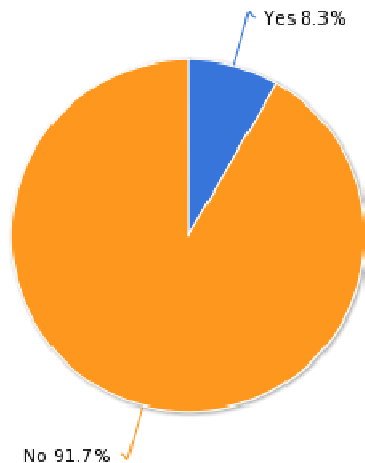
Fluorescent Lamp Drum-Top Crusher Survey Results

Problem Statement – U.S. EPA and State and Territorial (States) regulatory agencies recommend that mercury containing fluorescent lamps be recycled. One device commonly used by industry at the beginning of the recycling process is the drum-top crusher (DTC). Studies have revealed significant problems with the release of mercury from some DTCs during operation, and there appears to be variability in how States regulate DTCs (from no regulation to requiring a treatment permit). This survey is to quantify the regulatory posture of States with regard to DTCs, to establish a baseline of knowledge, and assist the ASTSWMO Hazardous Waste Recycling Task Force in its dialogue with U.S. EPA on this topic.

Question: Does your State agency accept the position that drum-top lamp crushers can be used without any restrictions?

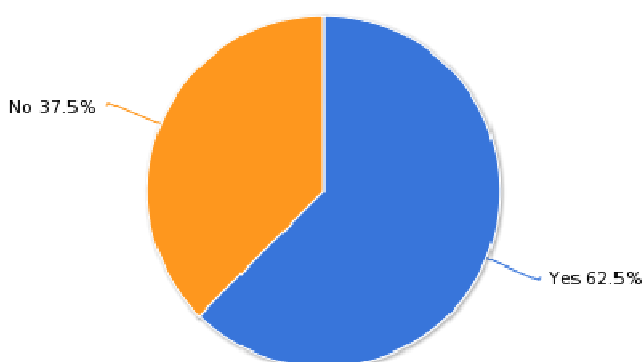
While over 90% of those surveyed agreed that restrictions must be placed on the use of drum-top lamp crushers, a wide range of regulatory approaches were discussed within the comments section as described below:

- Several States allow crushing as a form of generator treatment as long as the crushed bulbs are on-site generated only and are managed as a hazardous waste after crushing.
- Other States have promulgated their own regulations that regulate crushing under their own State-specific universal waste regulations.
- Some States require that any facility wanting to crush bulbs must have a TSD permit.
- Other States require that only destination facilities need a TSD permit in order to crush bulbs.
- Some States consider crushing to be hazardous waste recycling as long as the bulbs were legitimately recycled meeting specific criteria.
- One State considers it recycling and lists no other restrictions besides employee training.
- One State recommends that crushers not be utilized at all.



Question: Does your State consider the crushing of bulbs in a drum-top crusher to always be considered a form of HW treatment? Please provide any caveats or comments you feel would be useful.

Although a majority of respondents (24 of 35 or 68%) replied affirmatively, two (2) of the affirmative responses were accompanied by comments stating that crushing bulbs that do not fail any characteristics of hazardous waste is not considered *hazardous waste* treatment. In addition, three (3) of the respondents who responded negatively indicated that crushing bulbs was not *always* considered hazardous waste treatment, included similar comments.



Question: If yes, which of the following best describes the regulation of the HW treatment: “Crusher is a Generator”; “By Permit”; or “Other”? Please provide any caveats or comments you feel would be useful.

In response to this follow-up question, the 24 affirmative responses to Question #3 were broken down as follows: Crusher is a Generator, 47%; By Permit, 14%; and Other, 38%. Additional comments provided indicate a wide variety of established requirements and interpretations applicable to crushing being considered treatment. Various permit exemptions for onsite crushing by generators, as well as crushing by entities accepting lamps from offsite sources, were mentioned.

Question: If you selected Generator, does this also apply to CEGs as required by the conditions of 40 CFR 261.5(g)(3)? Please provide any caveats or comments you feel would be useful.

In response to this follow-up question, the 10 responses to Question #3.A. indicating “Crusher is a Generator” were: Yes, five (5); and No, five (5). Additional comments reflected requirements including no restrictions on Conditionally Exempt Small Quantity Generators (CESQGs) performing treatment; CESQGs are allowed to perform treatment if they comply with Large Quantity Generator provisions; and CESQGs are not allowed to crush lamps because crushing is limited to the site where recycling occurs. Again, these responses reflect a variety of requirements and interpretations.

Question: If you selected Generator, do you require the crushed glass to be counted towards generator status? Please provide any caveats or comments you feel would be useful.

In response to this follow-up question, the 10 responses to the question indicating “Crusher is a Generator” were: Yes, six (6); and No, four (4). The responses indicating “No” stated that the crushed glass can be managed as universal waste under their State programs. Three (3) respondents indicating “Yes” qualified their response by stating that crushed glass determined to be non-hazardous does not have to be managed as hazardous waste. There were a wide variety of comments ranging from “yes, it’s a hazardous waste” to “it depends”.

Question: If you selected Generator, does your State require the crushed glass to be manifested off site? Please provide any caveats or comments you feel would be useful. For example, please note if your State sometimes requires a manifest if going for disposal? Recycling? Or, if your State exempts manifesting if certain conditions are met and note those conditions.

In response to this follow-up question, the 10 respondents to the question indicating “Crusher is a Generator” were broken down as follows: Yes, six (6); and No, four (4). As above, two (2) respondents indicating “No” stated that the crushed glass can be managed as universal waste under their State programs. Also, as above, three respondents indicating “Yes” to this particular follow-up question, qualified their response by stating that crushed glass determined to be non-hazardous does not have to be managed as hazardous waste including manifesting off site shipments of crushed glass. There were a wide variety of comments ranging from “yes, it’s a hazardous waste” to “it depends”.

Question: If you selected By Permit, is a permit always needed? Please provide any caveats or comments you feel would be useful. For example, if a permit is needed, please describe the type of permit. If an approval is needed, please describe the approval. If a permit or approval is sometimes required (but not always), please describe the triggers.

In response to this follow-up question, the three (3) respondents who selected “By Permit” in response to the question each indicated that a permit is always needed to crush lamps.

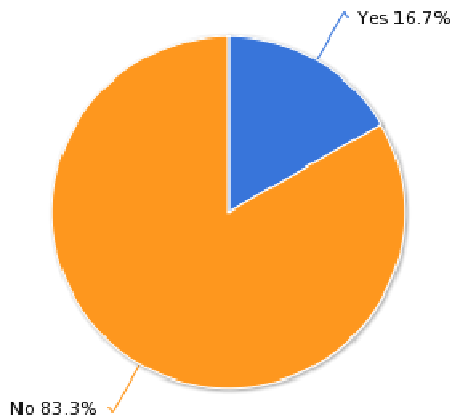
Question: If your State requires a permit or approval for drum-top crushers, identify all that can apply: “Hazardous Waste”; “Solid Waste”; “Universal Waste”; “Industrial Waste”; or “Other”. Please provide any comments you feel would be useful. If you checked “Other”, please provide a brief description of the type of permit or approval.

Of the 16 responses to this question, 14 selected “Hazardous Waste”, one (1) selected “Universal Waste”, and one (1) selected “Other”. Four of the “Hazardous Waste” responses included comments that a permit or approval would only be required for crushing lamps received from off-site sources or, if done by a generator, after the permissible generator accumulation period. A comment was included with the

“Universal Waste” response that a permit would only be required for destination facilities but not for other handlers or for generators crushing lamps onsite. The “Other” response included a comment stating that only a U.S. EPA Identification Number is required.

Question: If your State allows the use of drum-top crushers, is there a notification requirement imposed on persons who use the crushers? Please provide any caveats or comments you feel would be useful.

Of the 16 responses to this question, 13 indicated that no notification is required and three (3) indicated that notification is required. It should be noted that the affirmative responses included a comment that notification is required as a generator and not specific to lamp crushing; one (1) respondent indicated that lamp crushing should be indicated in the comment field of the notification form.



Question: If you answered “No” to, “Does your State consider the crushing of bulbs in a drum-top crusher to always be considered a form of HW treatment?” please answer the following questions.

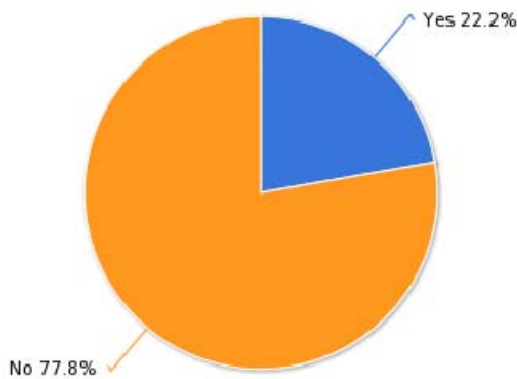
Nine (9) responded “Yes” and Two (2) responded “No.”

Question: Does your State consider fluorescent lamps that fail TCLP to be hazardous waste? Please provide any caveats or comments you feel would be useful.

Of the 11 responses to this question, nine (9) selected “Yes,” fluorescent lamps that fail TCLP are considered hazardous waste. One (1) “No” response included a comment that intact fluorescent lamps destined for recycling are not considered hazardous waste, but crushed lamps are; furthermore, this response also commented that representative samples of crushed lamps are required and none have passed TCLP.

Question: Does your State consider drum-top crushers to be part of the recycling process (i.e. are the drum-top crushers considered recycling units)? Please provide any caveats or comments you feel would be useful.

Of the 10 responses to this question, two (2) selected “Yes”, drum-top crushers are considered recycling units, and eight (8) selected “No”, they are not considered recycling units. One of the respondents indicating “Yes” added that drum-top crushers would be considered recycling units only if the crushed material was legitimately recycled. One of the respondents indicating “No” stated that drum-top crushers are evaluated on a case-by-case basis making it difficult to answer as a Yes/No question. Other comments from respondents indicating “No” included: “the activity is volume reduction, not recycling” and “the activity is not considered treatment or recycling.”



Question: If your State allows the use of drum-top crushers, is there a notification requirement imposed on persons who use the crushers? Please provide any caveats or comments you feel would be useful.

Of the 10 responses to this question, two (2) indicated “Yes”, notification is required for drum-top crushers and eight (8) indicated “No”, notification is not required. Two (2) of the respondents indicating that notification is not required included comments saying that entities crushing lamps may have to notify for other reasons such as transporter, universal waste handler, or the fact that their State requires all generators (CESQG, SQG, and LQG) to notify and report on their activities annually.

Question: Does your state have state-specific fluorescent tube or bulb regulations including but not limited to crushing?

Of the 25 States that responded to this question, 44% indicated that their State has specific fluorescent tube or bulb regulations, and 56% indicated that their State does not have regulations specific to the regulation of fluorescent tubes or bulbs.

The regulations that are applicable to the management of fluorescent bulbs or tubes vary considerably from State to State. Of the responding States, seven (7) have adopted specific regulations governing the management of fluorescent tubes or bulbs as

universal waste that address the crushing of such waste. One (1) of the responding States allows the crushing of fluorescent tubes and bulbs under the associated treatment by generator provisions. Finally, one (1) of the responding States has placed limitations on the disposal of fluorescent bulbs or tubes that would otherwise qualify for relaxed disposal options as household exempt waste or as waste generated from a conditionally exempt small quantity generator.

Question: Besides a permit or approval with explicit conditions (described above), does your state mandate or reference any other conditions that pertain to health and/or safety (OSHA, NIOSH, NFPA, ASTM, UL or similar state requirements)?

Of the States that responded to this question, six (6) incorporate OSHA exposure standards into their regulations associated with the crushing of fluorescent bulbs or tubes. While some of the responding States do not specifically reference OSHA exposure limits, they have generally incorporated safety standards into their regulations. For example, one (1) State said that the State Department of Health and/or Department of Labor regulate bulb crushing. Another State indicated that health and safety considerations must be made when crushing fluorescent bulbs or tubes. Another State indicated that the State Industrial Commission may establish safety standards, and yet another State requires that personnel are thoroughly familiar with procedures relevant to the operation of a drum-top crushing unit and emergency response procedures.

However, five (5) of the responding States indicated that they do not have specific health and safety requirements related to the use of drum-top crushers.

Question: If your State does not require a permit or approval with explicit closure or decommissioning standards for the area/equipment, do you have standards in guidance or otherwise that you would apply (or attempt to apply)? If yes, please provide a copy or direction to the guidance and any other documentation or comments you feel would be useful.

There is no consistency for generator closure for bulb crushers. Some States have the same closure standards for generators that they do for permitted facilities; some States only have closure standards in guidance and some have no formal guidance. However, some States rely on general closure performance standards supplemented by mercury cleanup criteria developed by U.S. EPA for the World Trade Center cleanups.

Question: Does your State have explicit closure or decommissioning standards as part of a permit or approval that are unique to bulb crushers? If yes, please provide a copy or direction to that guidance or any other documentation. Please also provide any other comments that you feel would be useful.

Any closure requirements for destination facility permits are not specific or unique to bulb crushers. Typically, bulb crushers used by permitted destination facilities are not

drum-top units. In other permits, the standard used in the closure plan was the U.S. EPA World Trade Center health-based benchmark concentrations.

Question: If you believe your State may relax its regulation of drum-top crushers, please describe in the comment field below

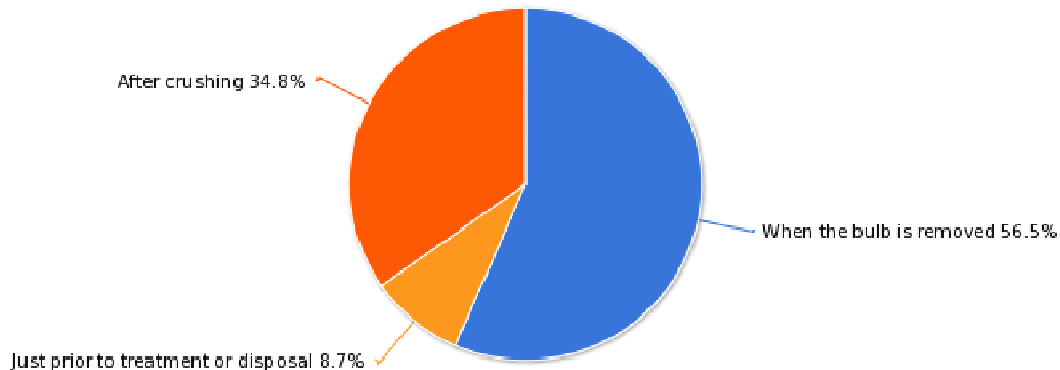
None of the respondents to the survey indicated that their State had any plans to relax the regulation of drum-top crushers.

Question: If you believe your State may tighten its regulation of drum-top crushers, or if you feel that some kind of additional regulation, or application of a different or additional standard would be better, please describe what you see as the problem and how it should be addressed.

A majority (%) of the survey respondents did not offer any specific comment to this question. Of the comments submitted, two (2) States noted that they would like to see the U.S. EPA take the lead in reviewing the issue by repeating the 2003 evaluation of the need for additional regulation under RCRA or OSHA to minimize mercury exposure to workers. One (1) State would like to prohibit the use of drum-top crushers completely, but the possibility of attaining that prohibition is not clear. The remaining comments related to tightening and clarifying regulations to bring drum-top crushers in line with other hazardous waste treatment operations, including notification, permitting, closure requirements, and financial assurance.

Question: When does your State apply the hazardous waste determination requirement with regard to fluorescent bulb crushing?

Just over half (56%) of the responding States consider when the bulb is removed from its fixture as the point at which the hazardous waste determination requirement applies with regard to fluorescent bulb crushing. A third (34%) of the responding States apply the waste determination after crushing. Only two (2) responding States impose the requirement just prior to treatment or disposal.



Question: Does your State have a Destination Facility as defined in 40 CFR 273 for recycling fluorescent tubes?

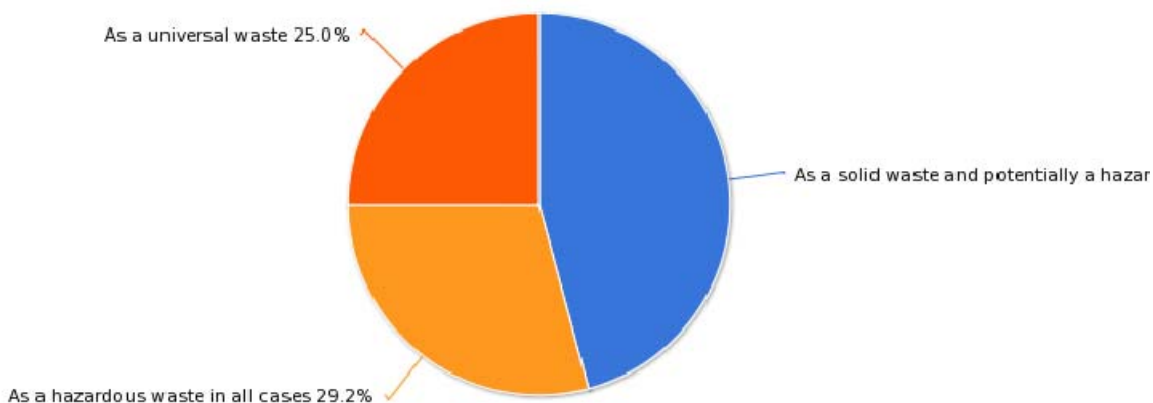
Ten (10) States answered that they do have a destination facility as defined in 40 CFR 273 for recycling fluorescent tubes. Fourteen (14) States do not have destination facilities. This indicates that, in about half of the States, Universal Waste handlers will have to look outside of their State to recycle fluorescent tubes under the regulations.

Question: If No, please identify the surrounding States where fluorescent tubes are sent for recycling from your state?

Most of the States (11 of 13) listed a neighboring State that has a Destination Facility where Universal Waste handlers in the State could recycle fluorescent tubes under the regulations. Multiple States use Destination Facilities in Maryland and Washington. This indicates that mailing programs and centralized Destination Facilities can work to allow waste lamp recycling in States without Destination Facilities. Further study may be needed of how to best encourage and enable recycling in the States without Destination Facilities.

Question: How does your State regulate a drum of crushed fluorescent lamps?

Eleven (11) States responded that they regulate a drum of crushed lamps as solid waste and as a potential hazardous waste. Seven (7) States responded that they regulate a drum of crushed lamps as hazardous waste in all cases. Six (6) States responded that they regulate a drum of crushed lamps as universal waste. The answer to this question signals that there is significant inconsistency in how States regulate drums of fluorescent lamps after they are crushed. Of particular concern is the number of States that continue to regulate drums of crushed bulbs as Universal Waste. This indicates that work is needed to continue to spread U.S. EPA’s interpretation that crushing is hazardous waste treatment.



Question: Does your State have a mercury retort facility that can recycle mercury from drums of crushed glass? If No, please identify the surrounding States where facilities in your State send crushed glass for retort.

Five (5) States indicated that they have at least one (1) retort facility that can recycle mercury from drums of crushed glass. Four (4) States that do not have retort facilities noted that crushed glass is sent to Wisconsin, Indiana, and Pennsylvania. Those States that do not have a retort facility noted that their crushed glass is sent to Pennsylvania, Arizona, Wisconsin, Minnesota, Texas, Maryland, and Virginia.