

The Bulb Eater® Lamp Crusher



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What is a Bulb Eater®?

- *A Bulb Eater® is a lamp crushing machine that processes, or crushes, spent fluorescent lamps into small fragments. The crushed glass is compacted into 55-gallon containers. The Model 55 VRS crushes over 1350 T8 4' lamps / 875 Straight T12 4' Lamps / 475 Straight T12 8' Lamps / 450 U-Shape T12 Lamps into one 55-gallon drum. The Model 55 VRS-U not only crushes straight fluorescent lamps of any length, but also u-shaped fluorescent lamps as well. The units are complete with filtration systems to help ensure both OSHA and EPA compliance.*

What is the difference between T8, T12, and T17 lamps?

- *The diameter of a lamp is measured in eighths of an inch and expressed as a "T" number, such as T8 (equals 8/8's or one inch) and T12 (equals 12/8's or an inch and a half diameter). T17 lamps, while uncommon, are 17/8's or 2 and an eighth inches in diameter. This designation is given in lamp catalogs and sometimes printed on the lamp itself. For example, one of the most common 4' lamps is an F40T12/CW. The Bulb Eater® systems come standard with an entry tube fitted for T12 lamps. T8 and T17 entry tubes are also available.*

How does the Bulb Eater® work?

- The lamp is fed into the entry tube of the machine.
- In roughly one second the lamp, whether straight or u-tube enters the machine and is crushed to pieces.
- The Bulb Eater's filtration system pulls the contaminated air out of the drum to filter out the released powder as well the mercury vapor.
- The contaminated air goes through a two stage filtering process in the blue case. The first stage filter captures over 99% of the released dust particulate. The second stage HEPA filter acts as a polishing filter and captures over 99.99% of the remaining particulate.
- At that point the air is clean but still contains mercury vapor.
- The mercury vapor is then blown out of the blue case and through the third and final filter.
- The carbon filter not only captures the mercury vapor, but also neutralizes it by converting the vapor to a non-hazardous substance.
- Clean air comes out of the Bulb Eater® exhaust vent.

What do I do with the crushed lamps?

- ***Contact Air Cycle to have the drums picked up and transported to one of our contracted recycling facilities to be recycled. This is the preferred method of the Environmental Protection Agency and is the most cost efficient option. Depending on your state regulations, you may be able to exclude this waste from your hazardous waste totals.***

How often do the filters need to be changed?

- *The filters need to be replaced on a scheduled basis. The first Stage filter bag is changed twice per drum. The second Stage filter cartridge is changed at least every 10 full drums. When changed, the filters can be placed on top of the crushed glass inside the drum (depending on applicable regulations). The filters are sent for recycling with the crushed lamps in the drum. The 3rd Stage premium-grade activated carbon filter is rated for over a million lamps. Based on these figures, most facilities will never need to change this filter. Should this activated carbon filter become saturated, the filter can be recycled.*

Why can't I just throw my lamps in the trash?

- *Lamps contain mercury and in most cases are considered hazardous. The Environmental Protection Agency regulates the management of spent lamps. Most states do not allow hazardous lamps to be disposed in solid waste landfills.*
- *Facilities that throw their spent lamps in the trash thinking they are saving money may be mistaken. Throwing spent lamps in the trash may result in the person being held responsible for the cleanup of a remote and costly Superfund site.*

- *One common method for determining whether a waste is hazardous is the Toxicity Characteristic Leaching Procedure (TCLP) test. The TCLP test is a laboratory test that simulates the potential leaching of hazardous wastes under conditions typically found in municipal solid waste landfills. If the concentration of mercury in water that is passed through a sample of crushed fluorescent lamp fragments exceeds 0.2 mg/liter, the crushed lamp fragments are classified as a hazardous waste.*
- *In most cases, standard fluorescent lamps and lamp fragments fail the TCLP test and are considered hazardous wastes.*

How is controlled crushing regulated?

- *In States that allow crushing and classify crushed lamps as universal wastes, persons can generally store their waste lamps on-site for up to one year, can ship waste lamps off-site with a bill of lading rather than a hazardous waste manifest, and need not include their lamps when calculating their hazardous waste totals.*

Jurisdiction	Generator Exemption (CESQG)	Where can waste from CESQG go?	Can the waste be declared non-hazardous, based on TCLP?	Other stringency or exemptions?
Federal EPA	Generators producing less than 100 kg (220 pounds) of hazardous waste (HW) or 1 kg acute HW in each month, including all HW generated. CESQGs are exempt from federal rules, but not exempt from liability (40 CFR 261.5)	Waste may go to any Municipal Solid Waste Landfill (MSWLF)	Wastes that test less than 0.2mg/l soluble mercury are not considered hazardous under federal rules.	Crushing can only be done by generator (40 CFR 262.34); crushed waste that is not UW- must be managed as RCRA HW. Crushing not allowed within federal UWR, but may be within State UW regulations. No one may crush third-party lamps without treatment authorization [1]. No mobile treatment units.
Idaho	same	same	same	same

Conditionally Exempt Small Quantity Generator (CESQG) - A generator that produces no more than 100 kg [220 lb] of hazardous waste, or no more than 1 kg [2.2 lb] of acutely hazardous waste, per calendar month. Please see [40 CFR 261.5](#) for the specific applicability. (If all the hazardous waste was comprised of 4-foot fluorescent lamps, this would translate to 350-450 lamps, depending on diameter.) CESQGs are exempt from many of the requirements for hazardous waste generators provided they comply with certain conditions specified in the RCRA Subtitle C regulations and their state regulations.

- *Under state and federal hazardous waste regulations, controlled crushing (which is what the Bulb Eater® systems do) is considered treatment. The hazardous waste rules typically require a person who treats wastes to obtain a permit. Federal and most state hazardous waste rules, however, exempt from the permit requirement persons who treat their wastes "within a drum, tank, or container." (See 40 CFR 262.34).*

- Due to mercury concerns, recycling fluorescent bulbs is highly recommended by the Idaho Dept. of Environmental Protection and is required for many facilities throughout the state
- Crushing fluorescent bulbs is allowed in Idaho
- Prepaid recycling by mail is allowed in Idaho