

## Empty Container Disposal

This guidance document provides instruction on the proper management of empty containers for disposal. Containers include plastic and glass bottles, plastic bags and bladders, metal and plastic pails or drums. The purpose of this document is to ensure used containers are properly and safely managed to prevent injury and environmental contamination from improper disposal. These containers are considered contaminated until they are purposely decontaminated in accordance with these instructions.

### **Definition of an Empty Container:**

Federal Environmental Protection Agency (EPA) regulations define an empty container as a container in which all materials have been removed using practices commonly employed to remove materials from that type of container, e.g. pouring, pumping or aspirating. To be considered empty, containers that held liquids must not have one drop of material left that can be removed by inverting the container. Containers that held solid and semi-solid materials are considered empty when no more material can be feasibly removed by scraping or chipping. Every effort should be made to remove as much of the remaining material as possible. This includes airing out empty solvent containers in chemical fume hoods, rinsing bottles containing solids, and rinsing acid/base bottles using an appropriate solvent and collecting the rinse for hazardous waste disposal. For containers that held a radioactive material, contact the Radiation Safety group for guidance: 303-492-6523. Containers that held biohazardous material must be disinfected and rinsed. Aerosols are considered empty when all contents have been used to the maximum extent feasible under normal use and the propellant approaches atmospheric pressure.

### **Acutely Hazardous:**

Containers that held extremely hazardous or acutely toxic hazardous material (EPA “P-Listed” chemicals, or if the oral LD50 is less than 50mg/kg) must be managed as hazardous waste using the Hazardous Material/Waste tag provided by EH&S. Send in the empty original container through EH&S. Do not rinse out containers that held acutely toxic hazardous materials - this will create more waste and increase disposal costs. The EPA “P-list” can be viewed on the EH&S website: <http://www.colorado.edu/ehs/pdf/EPAplis.pdf>.

### **Reuse:**

Reusing empty containers is highly recommended when appropriate. They can be used to store and dispose of spill clean-up residues or used for hazardous waste collection and disposal. However, please do not reuse containers for radioactive waste storage – this could result in the creation of a mixed hazardous waste, which is extremely expensive to dispose of. It is important to use a container made of a material that is compatible with the chemical/hazardous waste to be stored in it and that it be cleaned of any residues to eliminate chances



of chemical reactions resulting from combinations of incompatible chemicals. Make sure all original markings have been removed or defaced and the current contents are clearly labeled.

**Recycling:**

At the current time, no options exist for recycling of glass, metal, or plastic chemical reagent containers. Please do not place these containers in or near recycling collection areas. Chemical reagent containers placed into the recycling bins can cause an entire batch of materials destined for recycling to be rejected and sent to a landfill if they are not segregated out. This includes laboratory glassware, equipment, Pyrex, etc.

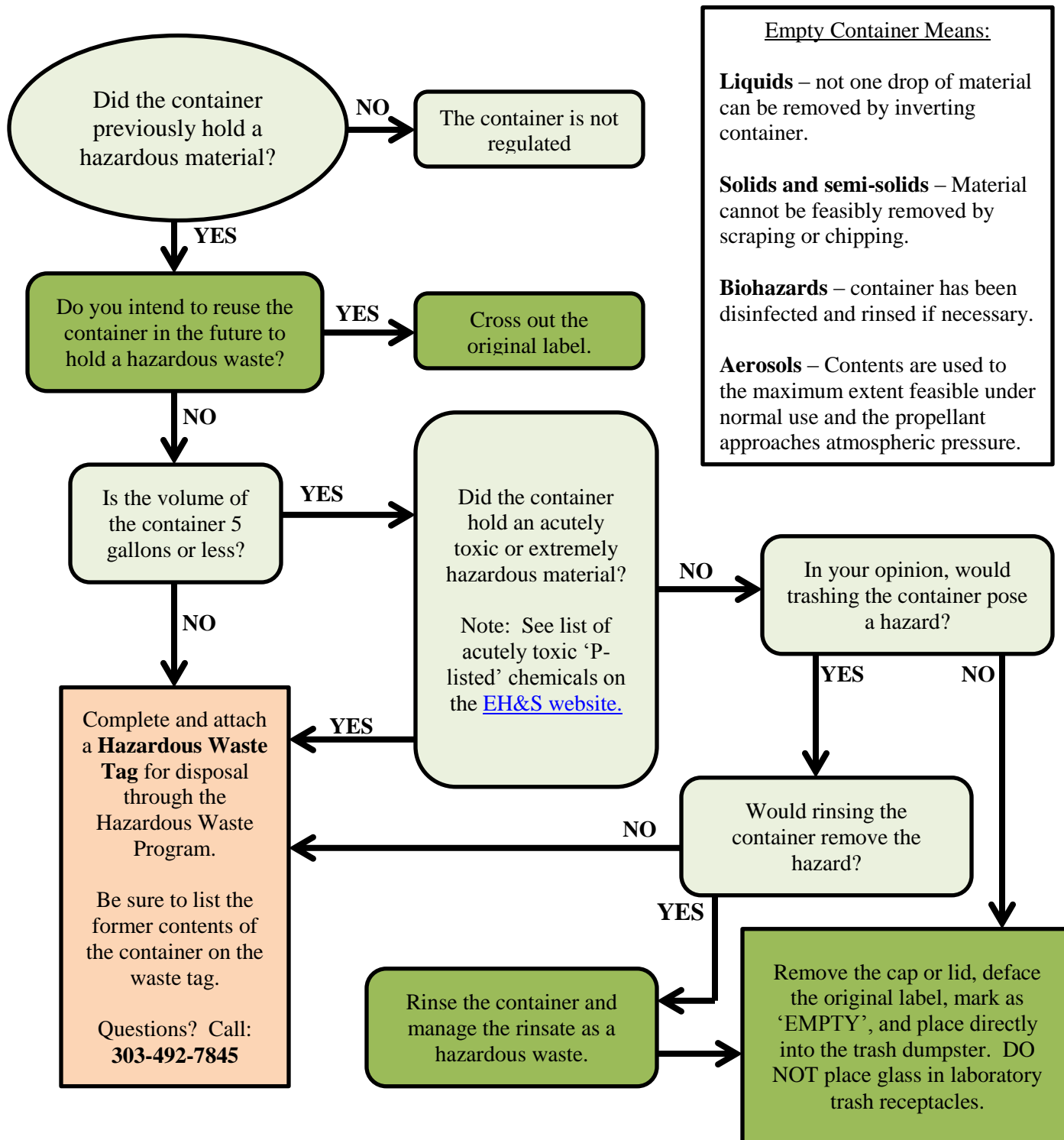
**Disposal:**

All containers that have been certified empty using the practices above must have the manufacturer's label or any other markings identifying the previous contents completely removed or defaced and the word "empty" written on the container. Covering or defacing original labels and labeling as "empty" will help the Facilities Management personnel and other personnel know the container is empty and has been properly managed. Sealed containers may become pressurized during compaction so be sure to remove all lids and bottle caps prior to disposal. Empty containers should be taken directly to the trash dumpster for disposal by the laboratory personnel generating the containers. Do not place glass containers into trash receptacles! They may break and become a puncture hazard for the custodians when managing the wastes in the trash receptacles.



### Empty Container Decision Tree

(Not to be used for containers that previously held Radiological Materials – contact the Radiation Safety Group for assistance)



Empty Container Means:

**Liquids** – not one drop of material can be removed by inverting container.

**Solids and semi-solids** – Material cannot be feasibly removed by scraping or chipping.

**Biohazards** – container has been disinfected and rinsed if necessary.

**Aerosols** – Contents are used to the maximum extent feasible under normal use and the propellant approaches atmospheric pressure.