

DISPOSAL OF CHLOROFORM CONTAMINATED MATERIALS

(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

Purpose

The purpose of this Safe Operating Procedure is to describe proper management of items intended for disposal that are or may be contaminated with chloroform. This SOP is focused on 'disposable' items commonly used in a laboratory setting. Direct questions about other types of chloroform contaminated items to EHS.

Background

Chloroform is a chlorinated solvent commonly used in many laboratories. During use, small amounts of chloroform may come in contact with or contaminate items that are ordinarily discarded after use (i.e., paper towels, pipette tips, microfuge tubes, etc.). Items normally disposed after use that have become contaminated with chloroform may be regulated as 'hazardous waste' when disposed depending on the nature of the waste material, conditions of use, and concentration of chloroform in the waste.

Empty Containers

Glass or plastic bottles, microfuge tubes, pipette tips, and other items used to contain or transfer chloroform and chloroform containing/contaminated solutions are considered 'containers' under the hazardous waste regulations. According to these regulations, containers that are 'empty' can be disposed as normal trash. A chloroform container meets the definition of 'empty' if:

- It has been emptied by normal means such as pouring, pumping, aspirating, etc.; **AND**
- The remaining residues constitute no more than 3% by weight of the total capacity of the container.

Relating this definition to laboratory work would include a microfuge tube that has had its contents removed by a pipette, and a pipette that has been blown empty in delivering its contents. Small amounts of residue may remain but both containers (the microfuge tube and pipette tip) have been rendered empty and can be discarded as normal trash. If, however, only part of the contents of a microfuge tube are intentionally withdrawn or the pipette is intentionally not blown empty or if more than 3% of the total capacity of the tip or microfuge tube remains, then the container is not empty and must be tagged for collection by EHS.

Disposable Materials Other Than Containers

Workers often protect themselves against exposure to chloroform by wearing protective gloves. They may also protect work surfaces with absorbent padding. These are examples of items other than containers that are designed to be disposable and which could become contaminated with chloroform during a lab procedure. Items such as these are evaluated on the amount of contamination present. The regulations define 'hazardous wastes' as those materials intended for disposal in which an extract of the waste contains chloroform at a concentration of 5 mg/Kg or more.

Observe the following guidelines when determining whether to dispose of these types of materials as ordinary refuse or containerize for disposal via EHS. Remember to use the guidelines in the previous section for empty containers!

- Containerize for collection by EHS disposable items intended for discard that are associated with known spills or leaks of chloroform or chloroform-containing solutions (i.e., absorbent pads, PPE, etc.). These types of materials are likely to contain chloroform at concentrations above the regulatory threshold.
- Disposable items that did not come in contact with or become contaminated with chloroform during use can be disposed as ordinary refuse. This is often the case with disposable gloves. Routine and careful use generally does not lead to contamination.
- Evaluate other routine process waste to determine if the concentration of chloroform is likely to be at or near the regulatory threshold. If so, then containerize for collection by EHS.
 - As a general rule (and considering dilution that occurs as part of the method specified for analysis in the hazardous waste regulations), a pound of debris containing two or more drops of chloroform has the potential to exceed the regulatory threshold concentration and should be containerized for disposal via EHS.