

## Unknown Chemical Waste Disposal

An unknown is defined as a chemical in an unlabeled container for which the identity is unknown. Federal, state and local regulations specifically prohibit the transportation, storage, or disposal of wastes of unknown identity. In addition, hazardous waste disposal companies will not accept unknowns without proper analysis. Unknown or unlabeled chemicals require analysis prior to disposal. Unknown chemicals present serious legal and safety problems for the university.

The process for identifying an unknown chemical can be tedious and costly. However, some activities can be done to prevent the generation of an unknown as well as identifying an. Unknown chemicals must be properly identified according to hazard class before proper disposal. The hazards that should be noted include: corrosive, ignitable, oxidizer, reactive, toxic and radioactive.

Every effort should be made by laboratory personnel to identify unknown chemicals. Here are a few steps that can be taken to help this effort:

1. Consult with the Principal Investigator (PI) or Supervisor/Manager about the type of work that was being conducted.
2. Ask other laboratory personnel if they are responsible for, or can help identify the unknown chemical. . Someone may remember its contents
3. The type of research currently being conducted in the laboratory can provide useful information for making this determination. Eliminating certain chemicals as a possibility helps narrow the problem as well. This is especially important for Mercury, PCB, or dioxin compounds because they must be managed separately from other hazardous waste.
4. Contact groups that previously used the area and see if they can recall the waste's identity.
5. Simple tests such as pH and flammability may aid in identification.
6. Check fresh reagents present; the waste was most likely derived from them. The field of possibilities can be greatly reduced in this manner.
7. For trade products, contact the manufacturer or search online to obtain an MSDS.

***CAUTION: Please do not open or handle an unknown if you suspect that it may detonate or react adversely. Proper precautions must be taken in the handling of any unknown chemical.***

If laboratory personnel are able to identify the chemical, a hazardous materials pickup request should be filled out. If it is not possible to identify the material, a "Hazardous Waste" label should be placed on the container and a pickup request should be filled out and submitted which describes all of the material with available information (i.e. 4-liter container of clear liquid).

## Preventing unknown chemicals is easy. Here are a few tips that will help:

- Label all chemical containers, including beakers and test tubes properly. This should be done even when creating reagent solutions for temporary use. Labeling will also prevent using the wrong material accidentally.
- Inspect containers and labels periodically. Immediately replace labels that have fallen off or become damaged.
- Label Containers using chemical names, not abbreviations, chemical structure, or formulae.
- Require all reaction mixtures stored in lab glassware to be labeled with chemical composition, the date they were formed, the name of the lab worker responsible and a note book reference. This information will assist to facilitate the disposal of the mixture in the event the lab worker responsible is not available.
- Archived research samples are often stored in boxes containing hundreds of small vials. Label the outside of the box with the chemical constituents.
- Maintain an accurate inventory
- Submit frequent waste pickup request forms to reduce the amount of chemicals in your laboratory. Dispose of spent materials and chemicals with no foreseeable use promptly.
- Require all graduating students and workers leaving to properly identify any unknown material before they leave the area or lab.
- Before moving out of a work area or leaving the University, go through the laboratory or work area with your supervisor or the new occupant to determine which chemicals need disposal and to identify anything that is ambiguously labeled. When relocating from one work area to another, do not leave any chemicals behind unless specific arrangements have been made with the new occupant.

Pictures below are some of the hundreds of unknowns from the August 2012 Choppin Annex move.

