Unknown Wastes

All waste material picked up by RMS Hazardous Materials Management (HMM) must be completely and accurately identified. Materials which are not identified are referred to as "unknown." The following are examples of "unknowns": bottles without a label, containers labeled with only codes, generic process labels that do not specifically list chemicals contained, and obviously mislabeled chemicals. Maintenance of labels, periodic inspections of chemical stocks and good chemical hygiene practices will prevent the occurrence of unknowns.

When an unknown is discovered, you must make every effort to provide an accurate description of the contents. Usually the contents can be identified by persons who work in the area where the material was used. If this fails to positively identify the material, then some elementary analysis of the material must be performed.

If the container is not identifiable, the following characteristic screening procedure should be used. If laboratory personnel can not perform this procedure due to time constraints or if they are uncomfortable performing the analysis on the unknown, the University's hazardous waste contractor will perform the analysis. The cost of this analysis and the disposal fee will be charged to the department.

Pre-screening Notices

Peroxidizable compounds such as ethers, dioxanes, tetrahydrofuran, etc., tend to absorb and react with oxygen over time to form potentially explosive compounds. Exposure to air and light accelerates this process. Therefore, if your unlabeled LIQUID has partially or fully evaporated and crystals are present (or the liquid has become cloudy), label the container as "POSSIBLE PEROXIDE." DO NOT follow the screening procedure for this material. Request assistance from Hazardous Materials Management.

On occasion, unlabeled chemicals could contain radioactive and/or biological materials. If you have any reason to believe that the material is radioactive have it screened by personnel in the Radiological Safety Office. They can be reached at 4-4870. If radioactivity is found, DO NOT follow the screening procedures for this bottle. If you have reason to suspect a biohazard, DO NOT follow the screening procedures. Request assistance from HMM.

Safety Considerations

For your safety, you should utilize chemical resistant gloves, goggles, a face shield and/or a polycarbonate work shield. All screening work should be performed in a functioning fume hood. Since the procedure tests items for flammability, it is recommended that a Class ABC fire extinguisher be available in case of unexpectedly violent reactions. Prior to the test, you should also locate the nearest safety shower, in case of an emergency.

844-4870 fax: 844-4197
Email Address: hazmat1@auburn.edu
Mailing Address: 971 Camp Auburn Road
Auburn University, AL 36849

Characteristic Screening Procedures

This simple four step procedure will enable us to remove practically any container from your laboratory. Steps one and two must be performed on all samples regardless of the result. Remember: if you are uncomfortable performing these procedures, ask your supervisor to find a qualified individual in your department who can perform them.

Description of Screening Procedures for Unlabeled Containers

Each unlabeled material is screened for the following four characteristics: air reactivity, water reactivity, corrosivity and flammability. Because of the small sample size used for analysis, a rigorous sampling method is not required. One container (aluminum dish, watch glass, petri dish, etc.) can sometimes be used for all four steps of the procedure. Residues from this procedure can be discarded down the sanitary sewer and/or in the normal trash. When labeling containers, do not cover the original label or any markings with the Waste Chemical tag.

1 - Air Reactivity

Pour a small amount (a few drops or crystals) of the material into your container in the hood. If the material is air reactive, a reaction will be apparent within 30 seconds and should be labeled “Characterized Waste—Air Reactive”. Proceed to step 2.

2 - Water Reactivity

Pour a small amount (a few drops or crystals) of the material into your container in the hood. Using a wash bottle filled with water, add a few drops of water to the compound. If the material is water reactive, a reaction will be apparent within a few seconds. If reactive, label the container “Characterized Waste—Water Reactive”; if not, proceed to step 3. Note: Steps 3 and 4 should both be performed if a classification is not determined in steps 1 and 2.

3 - Corrosivity

Obtain the pH of the sample using pH paper or a pH meter. For solids which do not test positive for water reactivity, add a small amount of water to the sample. Record the pH to the nearest whole number on the container label.

4 - Flammability

When performing flame tests with solids, use a small spatula to minimize potential reactions. Hold the spatula a few centimeters above the flame of a bunsen burner for a few seconds. If the solid does not start burning, move the material into direct contact with the flame. If the material does not start burning after 10 seconds of direct contact with the flame, it is considered not flammable. For liquids, use cotton tipped applicators to dip into the liquid before igniting.

http://www.auburn.edu/administration/rms/environmental.html
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Labeling Containers

If steps 1 or 2 are positive, label container as instructed above.

If steps 1 and 2 are negative, label the container according to the following:

- If flammable and pH = 3-11: “Characterized Waste—Flammable”
- If flammable and pH = 2 or less: “Characterized Waste—Flammable, Acid”
- If flammable and pH = 12 or more: “Characterized Waste—Flammable, Base”
- If not flammable and pH = 3-11: “Characterized Waste—Other”
- If not flammable and pH = 2 or less: “Characterized Waste—Acid”
- If not flammable and pH = 12.5 or more: “Characterized Waste—Base”

Any additional information about the contents of the container also should be shown on the Waste Chemical tag.

Disposal of Screened Containers

After labeling containers according to the preceding guidelines and completing internal manifests, request a pickup by calling Risk Management and Safety.