Chemical Waste Management

Environmental Health & Safety

SOP No. 6.2

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PURPOSE

The purpose of this SOP is to provide general guidance for chemical waste management in teaching and research work areas. Specific waste procedures should be outlined in the individual group's Work Area Safety Plans or SOPs. It is the laboratory's responsibility to perform a waste determination to identify the characteristics of all wastes to be generated and develop procedures for management of all waste streams.

NOTES

Chemical waste management can be one of the most intimidating and hazardous operations included in laboratory work. Special care should be made to avoid mixing incompatible wastes such as:

1. Halogenated and non-halogenated wastes,
2. Acid and base wastes, and
3. Inorganic and organic wastes, particularly nitric acid with any organic material.

Contact EHS Environmental Protection at ehs.environmental.safety@ttu.edu if mixed waste consisting of chemicals and biological materials will be produced.

Contact EHS Environmental Protection at ehs.environmental.safety@ttu.edu for proper disposal and handling of high hazard waste (e.g., dried picric acid, ether or other peroxide-former with high levels of peroxides, explosives, energetic materials, toxic gases, etc.).

PROTECTIVE EQUIPMENT

Basic PPE for laboratory work includes lab coat, eye protection and appropriate gloves. Additional PPE may be required and should be indicated in that operation's SOP.

MATERIALS

Appropriate waste containers

EHS waste labels

Secondary containment

Vented (or pressure-relief) caps (available for FREE from EHS)

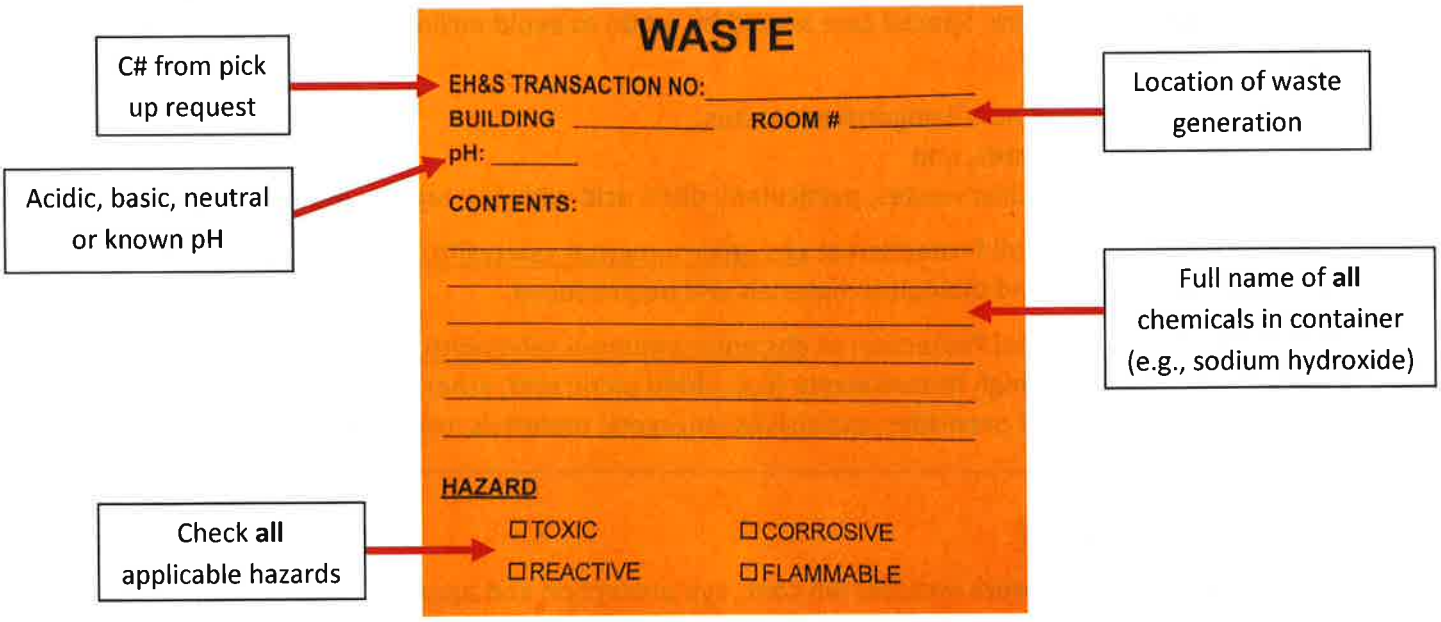
PROCEDURE

Chemical Waste Containers

- Triple-rinse repurposed containers with an appropriate solvent to remove any residual chemical. Each rinse should be collected as chemical waste.
- Food or drink containers are **not** appropriate waste containers.
- Waste containers must be compatible with the contents.
    - Do NOT use metal containers with corrosive chemicals (i.e., acids and bases).
    - Some solvents are incompatible with certain plastics. Check the SDS of the materials for container recommendations.
- Keep containers in good condition by limiting spills and checking often for corrosion and compromised containers.
- Completely cover the manufacturer label before repurposing as a waste container. This can be done by spray painting, duct taping or taping paper over the label.
- Use venting caps for wastes prone to over pressurization. They are available for free from EHS or the Chemistry Department stockroom.

EHS Waste Label

The EHS Waste Label must be appropriately completed prior to EHS pick up (see Figure below). Add the full name of the contents as soon as the contents are added to the container.



Satellite Accumulation Areas (SAAs)

SAAs refer to each laboratory's waste accumulation area. The waste generated in each work area must remain in the work area until EHS pick up.

- No more than 40 gallons of chemical waste or one quart of acutely hazardous waste (as defined in 40 CFR 262.34(c)(1)) can be accumulated in a SAA at any one time.
- Use secondary containment to hold chemical waste containers to collect spills or if a container becomes compromised (see Figure 1).
- Do not fill waste containers past ¾ full or use past 90 days of accumulation.
- Keep waste containers closed when waste is not actively being added or removed from the container.
- Waste containers stored on the floor must be placed in secondary containment to collect spills.

Figure 1: Satellite Accumulation Area. Note the secondary containment, waste labels and minimal volume.

- Store waste containers in a secure location. Containers not ready for pick up should be stored with their respective Storage Group according to Appendix AA (e.g., store flammable waste in a flammable cabinet).

EMERGENCY PRE-PLANNING

Unknowns

- Limit the number of "unknown" chemicals by regularly cleaning out laboratory work areas of old, synthesized and/or unused chemicals.
- Submit "unknown" chemicals to EHS for pick up as soon as they are discovered. Identify any known hazards or potential components.

Incompatible Wastes Mixed

- If you discover that incompatible wastes have been mixed, notify EHS at ehs.environmental.protection@ttu.edu immediately for guidance.
- If chemical contents produce gas, use a vented cap to relieve pressure.

Incompatible Containers Used

- If a container becomes compromised or might become compromised due to incompatible contents (e.g., corrosive waste in a metal container), immediately transfer the waste into a compatible container that is in good condition and does not leak.

REFERENCES

Section A19, Waste Management and Disposal, University Laboratory Safety Manual

AKNOWLEGEMENT OF PROFICIENCY

The individuals below have been trained and are competent in completing the above procedure.

Worker Name	Worker Signature	Date	Supervisor Initial	Date