## SMU EHS Standard Operating Procedure for use of

### TOXIC LIQUIDS AND SOLIDS

Examples: chloroform, 2-mercaptoethanol, xylene, methanol, acrylamide, ethidium bromide, trypan blue

### HAZARDS

#### Potential Hazards
- **Exposure** can occur through the skin (possibly after penetrating gloves), **inhalation** of vapors or aerosols, or by accidental **ingestion** or **injection**.
- **Acutely toxic** liquids and solids can cause **death** or **systemic toxicity**.
- Exposure can cause **health hazards** (such as **cancer**, **reproductive effects**, **mutations**, **respiratory sensitization**, and **organ damage**) and/or **irritation** of the eyes, skin, or respiratory system.
- Some toxic liquids and solids may also have **physical hazards**.
- See **Safety Data Sheet** (SDS) for specific hazard information.

### HAZARD CONTROLS

#### Selection and Purchase
- Purchase the **smallest containers** at the **lowest concentration/quantity** practical.
- Purchase in **shatter-resistant containers** if available.
- When possible, order solids in **pre-weighed amounts**, in a **septum-top** vial.

#### Storage and Transportation
- Store **below eye level** but **not on the floor**.
- Keep toxic liquids and solids away from incompatible materials (see SDS).
- **Transport** in a **bottle carrier** or using **secondary containment**.

#### Engineering Controls
- Work in a **chemical fume hood if**:
  - Heating the materials AND/OR
  - Working with open containers
- When there is no risk of exposure to **hazardous vapors or gases**, a **biological safety cabinet** may be used instead.

#### Work Practice Controls
- Line the work area with absorbent, leak-proof bench pads.
- Use the smallest practical quantities for the work being performed.
- Plan work to **avoid contact with gloves**. Change gloves immediately if contaminated.
- Change gloves at least every 2 hours and wash hands.
- **Decontaminate** work area with an appropriate solution.
- **Weigh solids** in a **fume hood**.

#### Personal Protective Equipment (PPE)
- **Minimum PPE**:
  - Fastened lab coat
  - Safety glasses
  - Appropriate gloves
- **Risk of splash or large amounts, add**:
  - Safety goggles
  - Impervious sleeves and apron (or coverall)

*Consult the manufacturer’s glove guide for effectiveness with the chemical.*

### OTHER

#### Waste
Collect and store according to SMU Hazardous Waste guidelines.

#### Training
Sign Laboratory Specific Training document to indicate understanding of this SOP.

#### Questions
Contact Environmental Health and Safety at 214-768-2430.

#### Additional Guidelines
Please complete page 2 for additional laboratory – specific guidelines.
Laboratory-specific chemicals and procedures: