

Principal Investigator: _____

Date Approved: _____

Acute Toxicants

Acute toxicants are chemicals that pose a high level of immediate health risk to individuals. Acute toxicants may enter the body via four routes: **ingestion, skin absorption, injection** and **inhalation**. With each route of exposure, the likelihood of injury depends on the toxicity of the chemical involved, the concentration of the material, and the duration of contact. Under the Globally Harmonized System (GHS), they are classified as follows:

Routes of Exposure	Toxicity Range		Hazard Statement	Pictogram
	Category 1	Category 2		
Oral (mg/kg body weight)	$LD_{50} \leq 5$	$LD_{50} > 5$ and ≤ 50	Fatal if swallowed	
Dermal (mg/kg body weight)	$LD_{50} \leq 50$	$LD_{50} > 50$ and ≤ 200	Fatal in contact with skin	
Gases (ppm)	$LC_{50} \leq 100$	$LC_{50} > 100$ and ≤ 500	Fatal if inhaled	
Vapors (mg/L)	$LC_{50} \leq 0.5$	$LC_{50} > 0.5$ and ≤ 2.0		
Dust (mg/L)	$LC_{50} \leq 0.05$	$LC_{50} > 0.05$ and ≤ 0.5		

Personal Protective Equipment & Personnel Monitoring		
		
Lab Coat	Gloves	Eye Protection
Traditional lab coat or flame-resistant lab coat when working with flammable materials.	Nitrile or neoprene gloves typically provide adequate protection against minor splashes. Consult with your PI or supervisor to determine whether any materials involved in your process require alternative hand protection.	ANSI Z87.1-compliant safety goggles, or face shield if a splash hazard is present.

Labeling & Storage

Store away from other materials that are not particularly hazardous, or which may be chemically incompatible. Each primary container's label must include a skull-and-crossbones pictogram or identify the material as acutely toxic. Containers of acute toxicants should be stored in leak-proof secondary containment within a Designated Area. The secondary container's label must include a skull-and-crossbones pictogram or identify the material as acutely toxic. Also, if not plainly visible (e.g., through a cabinet window), labelling must be applied to storage locations where these are stored to avoid an inadvertent encounter.

Engineering Controls, Equipment, & Materials

Fume Hood

It is advisable to use a fume hood when working with materials which are toxic by inhalation. If your protocol does not permit the handling of such materials in a fume hood, contact EH&S to determine whether additional respiratory protection is warranted.

Housekeeping

Spills

Treat all spills of these materials as a major spill. Notify others in the area of the spill, including your supervisor. Evacuate the location where the spill occurred. Call 911 and alert TWU DPS (940-898-2911 in Denton; 214-689-6666 in Dallas; 832-870-6128 in Houston). Report any exposure to EH&S at 940-898-4001. Remain on-site (at a safe distance) to provide detailed information to first responders.

Decontamination

Wearing proper PPE, decontaminate equipment and bench tops using soap and water. Dispose of the used chemical and contaminated disposables as hazardous waste following TWU EH&S guidelines.

Waste

Refer to the TWU Chemical Hygiene Plan for details. Please note that some acute toxicants may be considered Extremely Hazardous when disposed of as waste.

First Aid & Emergencies

Skin Contact

Immediately remove contaminated clothing and accessories; flush the affected area with water. Seek medical attention immediately.

Eye Contact

Check for and remove contact lenses. Immediately flush eyes with water for at least 15 minutes. Seek medical attention immediately.

Inhalation

Move affected individual(s) into fresh air. If symptoms persist, seek medical attention immediately.

Ingestion

Seek medical attention immediately.

