UNIVERSITY OF NORTH CAROLINA CHARLOTTE | ENVIRONMENTAL HEALTH & SAFETY

Standard Operating Procedure

Acute Toxicants

Principal Investigator: _____ ***Date Approved:*** _____

This document covers basic chemical safety information for acute toxicants. The use of any acutely toxic chemical is subject to pre-approval by the Principal Investigator (PI) and/or Supervisor. PI and/or Supervisor may use the sheet attached to this SOP to document any lab specific training for Acute Toxicants. DO NOT USE ACUTE TOXICANTS UNTIL YOU HAVE OBTAINED THE NECESSARY PRE-APPROVAL.

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	
Inhalation	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. Primary containers should be labeled according to the UNC Charlotte Chemical Hygiene Plan. The secondary container's label must contain the chemical name and corresponding hazards. Containers of acute toxicants must be stored in leak-proof secondary containment within a Designated Area. 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 handing of such materials in a fume hood, contact EHS to determine whether additional respiratory protection is warranted.

Housekeeping

Spills

Notify others in the area of the spill, including your supervisor. Evacuate the location where the spill occurred. Call 911 from any campus phone (or 704-687-2200 from a cell phone). Report any exposure to EHS at 704-687-1111. 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 the UNC Charlotte EHS guidelines.

Waste

Refer to the UNC Charlotte Chemical Hygiene Plan for details. Please note that some Acute Toxicant waste may be considered ‘acutely hazardous’.

First Aid & Emergencies

Skin Contact

Immediately remove contaminated clothing and shoes; flush skin with water for at least 15 minutes. Get medical attention immediately.

Eye Contact

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

Inhalation

Move person into fresh air. If symptoms persist, get medical attention immediately.

Ingestion

Get medical attention immediately.

Name	Signature	Date