Standard Operating Procedure

Mercury Fulminate & Lead Azide

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

This document covers basic chemical safety information for mercury fulminate and lead azide. The use of mercury fulminate and lead azide 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 Mercury Fulminate and Lead Azide. DO NOT USE MERCURY FULMINATE OR LEAD AZIDE UNTIL YOU HAVE OBTAINED THE NECESSARY PRE-APPROVAL.

Mercury Fulminate and Lead Azide

Mercury fulminate and lead azide are primary explosives that can undergo a sudden release of pressure, gas, and heat when subjected to an initiating mechanism such as friction, impact, catalysts, light, or heat. These substances are very sensitive, and can detonate with very small inputs of energy.

In addition to their physical hazard, mercury fulminate and lead azide are both also reproductive toxicants that have the potential to interfere with fertility, fetal development, and/or lactation.

Personal Protective Equipment & Personnel Monitoring		
 **Lab Coat**	 **Gloves**	 **Eye Protection**  **Face Shield**
Flame resistant lab coat.	Nitrile or neoprene gloves.	ANSI Z87.1-compliant safety goggles, or face shield if a splash hazard is present. Consider using a blast shield for extra protection.

Labeling & Storage

Store in secondary containment within a designated area at the manufacturer's recommended temperature in an explosion-proof refrigerator/freezer or an explosion-proof cabinet that does not contain flammables or chemically incompatible materials. Keep away from heat, light, and any potential initiating mechanisms. 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. If not plainly visible (e.g. through a cabinet window), labeling must be applied to storage locations where these are stored to avoid an inadvertent encounter.

Whenever possible, mercury fulminate should be kept wet to reduce its sensitivity to detonation. Lead azide may be stabilized by storing it in an aqueous 3% dextrin solution containing 4-5% lead (II) hydroxide to maintain basicity.

Engineering Controls, Equipment & Materials

Fume Hood

Work in a chemical fume hood whenever possible. Keep the sash at the lowest practical height while working, and close the sash when the fume hood is not in use.

Blast Shield

When working with mercury fulminate or lead azide the use of a portable blast shield inside the fume hood is highly recommended.

Cautions and Considerations

Initiating Mechanism

Mercury fulminate and lead azide are sensitive to friction, impact, heat, and electrical discharge. Consider working with equipment that cannot generate static electricity or sparks.

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

Dusts may be explosive. Spray surfaces with water and wipe dry.

Waste

Collect mercury fulminate and lead azide in sealed containers protected from light and heat, and dispose of as hazardous waste.

First Aid & Emergencies

Skin or Eye Contact

Remove contaminated clothing and accessories; flush affected area with water. If symptoms persist, get medical attention.

Inhalation

Move person into fresh air. Get medical attention immediately.

Ingestion

Rinse mouth with water. If symptoms persist, get medical attention.

Name	Signature	Date