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

This document covers basic chemical safety information for tetramethylammonium hydroxide. The use of tetramethylammonium hydroxide 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 Tetramethylammonium Hydroxide. DO NOT USE TETRAMETHYLAMMONIUM HYDROXIDE UNTIL YOU HAVE OBTAINED THE NECESSARY PRE-APPROVAL.

Tetramethylammonium Hydroxide

Tetramethylammonium hydroxide (TMAH) is an acutely toxic quaternary ammonium strong base corrosive, and a cholinergic agonist, commonly used for etching.

Exposures can cause difficulty breathing, skin burns, and/or severe eye damage depending on the location and extent of exposure. Dermal exposures to 25% TMAH commonly result in systemic toxicity leading to respiratory paralysis. Exposures have resulted in deaths in at least three instances since 2007. Two of the recorded fatalities occurred despite immediate decontamination and prompt medical care.

Exposure to concentrations of TMAH below 2.38% (a 1:10 dilution) have resulted in first degree chemical burns without systemic signs after decontamination and medical care.

Personal Protective Equipment & Personnel Monitoring		
 **Lab Coat**	 **Gloves**	 **Eye Protection**
Wear a traditional lab coat (or cleanroom gown) **AND** natural rubber apron over the top when working with concentrations of TMAH >2.38%. An apron may not be required when working with concentrations of 2.38% or less.	Nitrile gloves typically provide adequate protection against minor splashes. Consider wearing gloves that cover the entire arm or fore-arm. Consult with your PI or supervisor to determine whether any materials involved in your process require alternative hand protection.	ANSI Z87.1-compliant safety glasses, or safety goggles if a splash hazard is present. If large amounts are being handled consider using a face shield.

Labeling & Storage

Store in secondary containment away from acids, oxidizing agents and any other materials that 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 TMAH 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 performing any operation which could aerosolize TMAH. 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. Avoid TMAH from entering drains leading into the environment.

Decontamination

Decontaminate all work surfaces and equipment which may come into contact with TMAH with soap and water. Test wet surfaces with pH paper to neutralize the strong corrosive, verify complete decontamination.

Waste

Refer to the UNC Charlotte Chemical Hygiene Plan for details.

First Aid & Emergencies

In the event of exposure, call 911 from a campus phone or 704-687-2200 from a cell phone and immediately contact EHS at 704-687-1111.

Skin Contact

Immediately remove contaminated clothing and shoes; vigorously 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. Get medical attention immediately.

Ingestion

Rinse mouth with copious water. Do not induce vomiting. Get medical attention immediately.

Name	Signature	Date