UNIVERSITY OF NORTH CAROLINA CHARLOTTE | ENVIRONMENTAL HEALTH & SAFETY

Standard Operating Procedure

Hydrofluoric Acid

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

This document covers basic chemical safety information for hydrofluoric acid. The use of hydrofluoric acid 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 Hydrofluoric Acid. DO NOT USE HYDROFLUORIC ACID UNTIL YOU HAVE OBTAINED THE NECESSARY PRE-APPROVAL.

Hydrofluoric Acid (HF)

Hydrofluoric acid is a mineral acid which is highly toxic due to the fluoride ion. HF is a lipid-soluble molecule that penetrates tissue more rapidly than typical mineral acids. As a result, poisoning can occur readily through exposure of skin, eyes, when inhaled or swallowed. Symptoms of exposure to HF may not be immediately evident since HF interferes with nerve function. HF is also a calcium seeker; it dissolves the calcium in the bone. Accidental exposures can go unnoticed, delaying treatment and increasing the extent and seriousness of the injury.

Personal Protective Equipment & Personnel Monitoring			
 **Lab Coat**	 **Gloves**	 **Eye Protection**	 **Face Shield**
Traditional lab coat (or NRF cleanroom gown) **AND** natural rubber apron over the top	Arm-length natural rubber or heavy duty nitrile gloves over inner Butyl Viton gloves or disposable nitrile gloves Note: Avoid skin contact when removing gloves	ANSI Z87.1-compliant safety goggles, or face shield if a splash hazard is present	

Labeling & Storage

HF easily dissolves glass; therefore HF must be always be stored in its original container and placed in Nalgene/polypropylene secondary containment. HF solutions must be stored in plastic bottles and placed in Nalgene/polypropylene secondary containment. Do not store above eye level. Do not store with oxides, organic chemicals, bases or metals. 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. Also, if not plainly visible (e.g. through a cabinet window), labelling must be applied to storage locations (e.g. cabinet doors & secondary containment) where these are stored, to avoid an inadvertent encounter.

Engineering Controls, Equipment & Materials

Fume Hood

Use a fume hood to mitigate exposure to HF. 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.

Hydrofluoric Acid

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.

Only clean up spills if you are properly trained to do so, HF spill require specific materials and extreme caution.

Waste

HF waste is extremely hazardous. Note: Empty containers of HF and gloves/PPE that come in contact with HF must be disposed as hazardous waste with a waste tag affixed.

First Aid & Emergencies

All labs working with or storing HF must include Calcium gluconate gel in their first-aid kit.

Skin Contact

Immediately (within seconds) begin flushing the affected area and continue for at least 15 minutes. Remove all contaminated clothing. Wearing compatible gloves, massage calcium gluconate gel into the affected area. Re-apply every 15 minutes until medical help arrives.

Eye Contact

Immediately (within seconds) begin flushing the eyes in the eyewash and continue for at least 15 minutes. Get medical attention immediately.

Inhalation

Move person into fresh air. Get medical attention immediately.

Ingestion

Get medical attention immediately.

Name	Signature	Date