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Standard Operating Procedure for Hydrofluoric Acid (HF)

(Reference: www.des.umd.edu/ls/sop/HydrofluoricAcid.doc, http://safety.uchicago.edu/pp/labsafety/hydrofluoric_acid.shtml, www.cchem.berkeley.edu/rsgrp/SOPs/Hydrogen%20Fluoride.doc)

1. General

When working with a chemical for the first time, please consult a safety data sheet (SDS) to identify the material hazards and proper handling and storage procedures. If you have additional questions, please contact the University of Chicago Environmental Health and Safety Office at **773-702-9999** or safety@uchicago.edu.

2. Personal Protective Equipment

- Lab coat, safety goggles, full face shield, acid apron (natural rubber, neoprene, or viton).
- Medium or heavyweight viton, nitrile, or natural rubber gloves. A second pair of nitrile exam gloves should be worn under the gloves for protection against leaks (regular nitrile gloves will not be sufficient).
- Eyewash and shower must be nearby and accessible.
- Keep a tube of calcium gluconate gel on hand for topical use in the case of skin exposure.

3. Use, Procedures, and Storage

- Fluoride reagents should only be used in a fume hood.
- Never use HF when working alone after hours.
- All lab personnel, not just those who will be using HF, must be informed of the dangers of this chemical and the emergency procedures necessary in case of an accident.
- Undergraduate students should never be given the task of mixing HF solutions. Only experienced persons familiar with its properties should handle the concentrated acid.
- Set up a designated area for HF use and post a warning sign during use.
- HF must be used in polyethylene, polypropylene, Teflon, wax, lead or platinum containers. HF reacts with glass, ceramics, and some metals.

4. HF Waste Disposal

HF waste should be disposed in a chemically compatible container (e.g. polyethylene or Teflon®) with a sealed lid and clearly labeled. Do not store HF waste in glass or metal containers. Waste should be stored in labeled and closed containers in a well-ventilated area.

Waste containers should be no more than 95% full, and should stay in the lab for no more than 6 months from the day the waste container is started. Waste containers must be marked to identify the contents, hazards, and accumulation start and end dates. To request waste pickup, log-on to the EH&S Assistant (http://ehs.uchicago.edu/ehsaweb/ehsawebisapi.dll/EXEC). Please contact the Safety Office at 2-9999 if you have questions about a specific type of waste.

5. Emergency Procedures

[Spill]

- > 1 liter, outside of hood: Evacuate the area; close the doors; post the area with a sign to prevent others from entering; and notify the University Police at **123** or **773-702-8181**.
- < 1 liter, inside of hood: carefully neutralizing the spill with Spill-X-C caustic neutralizer (found in University provided spill kits in corridors)

[Skin Contact]

- Immediately proceed to the nearest emergency shower and flush affected area for at least 15 minutes;
- Remove all contaminated clothing while in the shower;

- If available, apply calcium gluconate gel to the affected area; and
- Contact the University Police at **123** or **773-702-8181** for medical assistance.

  (Note: Those who assist HF victims shall be careful not to contaminate themselves and wear proper PPE while assisting after an HF exposure.)

[Eye Contact]

- Immediately proceed to the nearest eyewash or sink and while holding the eyelids open, flush the eyes for at least 15 minutes with large amounts of water; and
- Contact the University Police at **123** or **773-702-8181** for medical assistance.

[Inhalation]

- Remove victim to fresh air; and
- Contact the University Police at **123** or **773-702-8181** for medical assistance.