SPECIAL NOTE: Students at Amherst College are not allowed to work directly with Hydrofluoric Acid. Any procedure involving its use shall be done by the professor or Principal Investigator!

General Information

Hydrofluoric acid is a very corrosive acid that readily penetrates deep into the skin, destroying the bone and other tissues.

Hydrofluoric acid produces a strong-smelling gas, hydrogen fluoride - which is an inhalation hazard that irritates the eyes, nose, and throat.

Personal Protective Equipment

When working with Hydrofluoric Acid the following Personal Protective Equipment (PPE) must be worn:

- Splash goggles
- Face shield
- Lab coat or apron (acid resistant)
- Long pants and long sleeve shirt
- Close toed shoes
- Thick nitrile gloves (double gloving is recommended; change as often as needed)

No part of your body shall be exposed when working with this compound.

Safety Devices

Fume hood – always work with Hydrofluoric Acid in a fume hood to prevent exposure by inhalation.

Identify the location of all the safety devices in the room before starting your procedure. Also, familiarize yourself with all the possible means of egress. Keep safety devices and means of egress clear at all times.
Specific Health Hazards

Hydrofluoric Acid has an OSHA Permissible Exposure Limit (PEL) of 3ppm and a short-term exposure limit (STEL) of 6ppm – which means that personnel shall not be exposed to more than 3ppm, on average, throughout the course of an 8-hour day and more than 6ppm, at any given time.

Hydrofluoric Acid may cause very severe burns by all routes of entry (see below). It causes severe damage to the organs of the digestive and respiratory tracts if ingested or inhaled.

Pictogram:
Hazards: Toxic, Environmental

Routes of Entry

Inhalation, skin contact, ingestion, eye contact.

If any part of your body comes in contact with Hydrofluoric Acid, call the Amherst College Emergency (ACPD) phone number 413-542-2111 immediately. Also call this number if you begin to feel ill after working with or in the vicinity of Hydrofluoric Acid.

Choose corresponding route of entry and action – note that the actions listed for each route of entry may vary depending on chemical; consult Safety Data Sheet.

Inhalation

If inhaled, move to fresh air, and get help. If you begin to feel ill during / after working with Hydrofluoric Acid, call the Amherst College Police Department (ACPD) at x2111 to report it.

Eye contact

Use eyewash to flush eyes with water for at least 15 minutes. Remove contact lenses, if present.

Skin Contact

Call the Amherst College Police Department (x2111).

Wash skin with plenty of water for 5 minutes (Use safety shower, if needed), then apply enough 2.5% calcium gluconate (usually kept close to workstation) to cover the entire area. Do NOT USE CALCIUM CHLORIDE!

Ingestion

Do not induce vomiting, rinse mouth, drink plenty of water, etc.

Storage and Special Handling
Do not store Hydrofluoric Acid in a glass or metal container. Store in an appropriate plastic container. Ensure that cap is always tightly closed and inspect container and cabinet frequently.

Store in a cool, dry, vented acid cabinet, at eye level or lower. Always store in a secondary container.

Label the primary container with the words: “Danger” and “Corrosive, Acutely Toxic”

Label the Cabinet to communicate that Hydrofluoric Acid is stored there.

Do not store outside of Vented Cabinet.

Compounds incompatible with Hydrofluoric Acid are bases, organic compounds, cyanides, metals, fluorine, and sulfides.

If you have Hydrofluoric Acid that you no longer need, please contact Jason Williams at x2736 or Environmental Health and Safety for disposal.

Special Handling

When making a dilution of Hydrofluoric Acid, always add acid to water, not water to acid

Never use any concentration or volume of Hydrofluoric Acid outside of a fume hood.

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Spill clean up

Do not attempt to clean up of any chemical unless you are comfortable with doing so.

If a spill of ANY volume or concentration of Hydrofluoric Acid occurs:

Alert everyone in the area

Leave the room

Close the door behind you

Call Jason Williams (Chemical Hygiene Officer) at x2736 or the Amherst College Police Department (x2111) to report it.

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Disposal

Disposable pipets, pipet tips, and any other disposable devices that come into contact with Hydrofluoric Acid shall be disposed of as hazardous waste. All grossly contaminated PPE shall be disposed of as hazardous waste.

Empty Bottles of Hydrofluoric Acid shall also be disposed of as hazardous waste

Waste containing Hydrofluoric Acid shall not be mixed with other types of waste.

Waste containing Hydrofluoric Acid is incompatible with metal containers, glass containers, bases, cyanides, metals, organic compounds.

If you have Hydrofluoric Acid that you no longer need, contact Jason Williams (Chemical Hygiene Officer) at x2736.
Questions

Contact Jason Williams or Environmental Health and Safety if you have any questions about this SOP or this compound.