



Owner C.H.O	DOC. NO. SOP	REV. 2	DATE 12/9/2019
DOC. TITLE SOP FOR HYDROFLUORIC ACID			

Environmental Health & Safety

STANDARD OPERATING PROCEDURES (SOP) FOR WORKING HYDROFLUORIC ACID AT AMHERST COLLEGE

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 immediately upon contact)

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 the Calcium Gluconate cream in the room before handling this chemical



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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

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, Corrosive

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 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

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 (ACDP) at x2111 to report it

Eye contact

Use eyewash to flush eyes with water for at least 15 minutes

Skin Contact

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

Ingestion



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Do not induce vomiting.

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.

Do not store with: bases, organic compounds, cyanides, metals, fluorine, sulfides

If you have Hydrofluoric Acid that you no longer need, please contact Jason Williams 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

Spill clean up

Do not attempt to clean up of any hydrofluoric acid spill, regardless of the volume or concentration

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) or The Amherst College emergency number (x2111) to report it.

Disposal



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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 the Chemical Hygiene officer

Questions

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