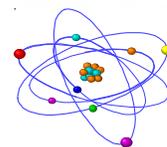


LABORATORY SAFETY FACT SHEET # 4

Hydrofluoric Acid



Hydrofluoric Acid (HF) is a CORROSIVE CHEMICAL and can severely irritate and burn the skin/eyes with possible permanent damage. Fluoride ions easily penetrate skin and cause deep burns. The time to onset of symptoms is related to the concentration of HF.

Pain may be delayed for several hours.

Every effort must be made to prevent exposure to HF.

More than 1000 cases of HF exposure are reported annually.

HF ACCIDENTS

A lab technician was working with 70% HF in the fume hood. He knocked over a small quantity (100-230 mL) onto his lap, splashing both thighs. He sustained burns to 9% of his body surface. No Calcium gluconate gel was applied to the affected area and contaminated clothing was not removed during the flushing with water. The injured man was taken to ICU and soon became unconscious. He subsequently died 15 days after the Hydrofluoric acid spill. In contrast, a worker survived burns to 22% body surface from 70% hydrofluoric acid. He showered immediately, had Calcium gluconate gel applied to the wounds and was taken to a nearby hospital where he was promptly treated.

FIRST AID

Immediately flush with copious amounts of water.

Apply *Calcium gluconate* as soon as burn is suspected.

Seek medical treatment.

Calcium gluconate gel 2.5% can be purchased through vendors such as: Fisher Scientific (www.fishersci.com) or www.attminerals.com or (619) 275-2016 or www.Calgonate.com.

It is highly recommended that all HF using labs have this first-aid on site.

REDUCING EXPOSURE

- Where possible, use local exhaust ventilation(hood).
- Locate the emergency eye wash and shower station.
- Routinely, wash thoroughly immediately after using HF.
- Post hazard and warning information, like Material Safety Data Sheet, in the work area.
- Communicate all information on the health and safety hazards of HF to potentially exposed workers.

Proper Protective Equipment

- Select proper protective work clothing. ACGIH recommends PVC as good to excellent protective material (i.e. apron).
- Eye protection: wear non-vented, impact resistant goggles and wear a face shield along with storage.
- Specific gloves for HF are made by various vendors. Listed below are three excellent glove choices for HF. Check with vendor for additional options.

Company	Glove name	Type	Breakthrough Time
Ansell	Barrier	Laminated Film	480 minutes
Best	Best Viton	Viton	185 minutes
Best	Ultraflex Nitrile	22R Nitrile	180 minutes

HANDLING AND STORAGE

- Prior to working with HF you should be trained on its safety hazards, proper handling and storage.
- Keep Calcium gluconate as part of your first aid kit.
- HF will attack GLASS and CONCRETE and is corrosive to METALS.
- Hydrogen fluoride is not compatible with STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE).
- Store in tightly closed containers in a cool, well ventilated area away from HEAT, LIGHT, and METALS.
- Store HF wastes in plastic containers-NOT GLASS.
- Hydrogen Fluoride reacts with WATER and STEAM to produce TOXIC and CORROSIVE FUMES. Carefully vent containers which have held Hydrogen fluoride prior to cleaning with water.
- Cylinders of Hydrogen fluoride gas should be vented regularly to prevent the build-up of Hydrogen gas.

For further information contact EH&S laboratory Safety Specialist at 893-4899