



## 3.19

# Chemical Safety Management

### Information Sheet : Hydrofluoric Acid

#### Purpose

The purpose of this information sheet is to guide workers and supervisors in general precautions and emergency management for hydrofluoric acid.

#### Q1 Why does hydrofluoric acid warrant special care?

Hydrofluoric acid is highly toxic and highly corrosive, even in dilute concentrations, and is extremely hazardous by all routes of exposure. Hydrofluoric acid is highly damaging to skin tissue and bone and is known to cause fatal work injuries from both skin contact and inhalation of vapour.

#### Q2 What should be considered before starting any experiment with hydrofluoric acid?

- A full risk assessment and safe operating procedure (including first aid and emergency spill procedures), has been developed prior to any work commencing.
- That anyone using the chemical has been trained and assessed as proficient, in accordance with the Risk Assessment and Safe Operating Procedure (including first aid and emergency spill procedures).
- That Calcium gluconate gel and tablets (the antidote) are readily available and the expiry date has not expired i.e. will be effective if required.

#### Q3 What general rules should be used when handling hydrofluoric acid?

- Do not work with hydrofluoric acid without well planned and communicated contingency arrangements and not until you are deemed to be proficient at handling hydrofluoric acid by your supervisor.
- Hydrofluoric acid must not be used in an open laboratory. Work using hydrofluoric acid must be done in a fume cupboard with fully functional and tested extraction rate, a scrubber and wash down facilities.
- Avoid a violent reaction, ALWAYS add hydrofluoric acid to water and NEVER water to hydrofluoric acid.
- Avoid all contact with hydrofluoric acid including inhalation. Avoid generating and breathing any mist or vapour.
- Do not eat, drink or keep food, drinks, or utensils in areas where hydrofluoric acid is in use or stored.
- Wear impervious gloves (Neoprene rubber, nitrile rubber or PVC gloves) at all times when handling hydrofluoric acid.
- Wear a protective apron, sleeve protectors, rubber boots and face shield or goggles whenever there is the possibility of being splashed with hydrofluoric acid and a respirator if there is any chance of inhaling the vapour.
- Locations where hydrofluoric acid is used and stored must have a fully tested emergency shower and eye wash facilities.
- Do not allow clothing which is wet with an acid fluoride to stay in contact with the skin. Remove pervious clothing immediately if contaminated with hydrofluoric acid. Any contaminated clothing is to be bagged and disposed of via the waste disposal system.

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## Information Sheet : Hydrofluoric Acid (Continued)

## Q4 What should you do in the event of an emergency with hydrofluoric acid?

**ALL EXPOSURES ARE AN EMERGENCY**

Regardless of how minor anyone coming into contact with HF (or suspected to have come into contact) **MUST** go to the nearest hospital (preferably to the burns unit). The SDS must be taken to the hospital with the worker.

**First aid**

First aid treatment must be commenced immediately it is realised or suspected that contact with hydrofluoric acid has been made.

- The affected person **MUST obtain medical treatment immediately preferably at a burns unit of a major hospital. Call for ambulance immediately by phoning (0)000.** Advise your exact location and contact details. Ensure someone is delegated to meet the Ambulance Service at the entrance to the building to direct them.
- Administer first aid in accordance with procedures until the ambulance arrives.
- Worksites using hydrofluoric acid **must** have in-date tubes of 2.5-3% calcium gluconate gel and calcium gluconate tablets with clear signage and easily accessible (as close to the work as possible). It is advisable that the SDS is printed and located with the calcium gluconate gel/tablets for reference by the attending medical professional.
- If the person does not go to the hospital by ambulance then they must seek medical attention (preferably the burns unit), even if the injury seems slight (take SDS with the patient to medical attention).

**Skin Contact (Regardless of how minor)**

- **Call for ambulance immediately by phoning (0)000.**
- Remove contaminated clothing using PVC gloves.
- Immediately wash the burnt area with copious amounts of water and remove any contaminated clothing. Use the sink tap and/or emergency shower (depending of the extent of the contamination).
- Apply calcium gluconate gel on and around the burn and massage it in with gloved fingers (Neoprene/PVC). Continue the gel massage every 15 minutes until medical treatment is available. For large or severe burns, four effervescent calcium gluconate tablets (600mg) should be given by mouth every two hours until the patient is admitted to hospital.
- **Seek medical attention immediately** (take SDS with the patient to medical attention).
- Note that any contaminated clothing is to be disposed of via [Cleaning and Waste Collection Request Form](#).

**Eye Contact**

- Call for ambulance immediately by phoning (0)000.
- Irrigate the eyes with water or isotonic saline solution immediately and copiously for at least 15 minutes;
- Seek medical attention immediately (take SDS with the patient to medical attention).

**Inhalation**

- Call for ambulance immediately by phoning (0)000.
- Where there is a risk to rescuers, the rescuers **MUST** wear respiratory protection and immediately transfer the patient to an uncontaminated location.
- Do NOT commence cardiopulmonary resuscitation (CPR) and Do NOT induce vomiting.
- Four effervescent calcium gluconate tablets (600mg) should be given by mouth every two hours (if conscious) until the patient is admitted to hospital.
- Seek medical attention immediately (take SDS with the patient to medical attention).

**Spills or leaks**

- You must be trained, competent and feel confident when cleaning-up a hydrofluoric acid spill. If you are not then you **MUST** get assistance from a trained worker or call in the services of the hazmat division of the fire service.
- Ensure you also contact Security office ext 35444 and advise of your exact location and nature of emergency. They will assist to direct the Emergency Services.
- Do not enter the contaminated area unless wearing protective clothing and full respiratory protection.
- Move people upwind from the area and cordon it off.
- Inform the chief warden and/or warden network.
- Keep clear of liquid and visible fumes.

**Further information**

If you require further information, please contact a member of the [HSW Team](#).

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