HYDROFLUORIC ACID INFOSHEET

HAZARD

Hydrofluoric Acid (HF) is a highly reactive, corrosive and toxic chemical. HF can be supplied as an anhydrous gas, but is most commonly supplied as an aqueous solution. Exposure to HF, even in very small amounts and low concentrations, can cause permanent injury, serious burns and even death.

GHS CLASSIFICATION

- Acute Toxicity: Skin: Category 1
- Acute Toxicity: Oral: Category 2
- Acute Toxicity: Inhalation Category 2
- Skin Corrosion/Irritation: Category 1c

DANGEROUS GOODS CLASSIFICATION

- Class 8 Corrosive
- Class 6.1 Toxic

MANAGEMENT

PROCUREMENT

- Actively seek to eliminate the use of HF.
- Consider alternate chemicals and processes.
- Complete a detailed risk assessment before introducing HF into the workplace. This risk assessment must be approved by Head of School or equivalent.
- Do not order HF (or source) until needed.
- Order the smallest volume and lowest concentration possible for the required purpose.
- Label containers with date received and then date opened.

HANDLING

- All workers located in a laboratory where HF is handled must complete HF awareness training, even if they are not handling HF themselves.
- Before being trained to use HF, workers must already be experienced in working with hazardous chemicals.
- Trained HF users must strictly follow an agreed and documented safe work procedure.
- The competence of HF users should be periodically reviewed against the documented safe work procedure.
- Minimise exposure by limiting the number of people who work with HF and limiting the number of laboratories where it is used.
- Never distract workers who are handling HF.

Considerations for the development of safe work procedures:

- Establish a designated HF work area and exclude non-essential workers from this area when HF is in use.
- Alert other workers in the laboratory when HF is being handled.
- Don’t work alone - always have a ‘buddy’ in the laboratory who is trained in HF first aid procedures.
• Minimise the volume and concentration of the solution prepared (where possible purchase low concentration stock solutions).
• Only use HF in a fume cupboard that is equipped with a scrubber and wash down facility.
• Use appropriate PPE
  o Neoprene gloves - double gloving is recommended and in some situations gauntlet gloves may be appropriate
  o Safety glasses or goggles - in some situations a face shield may also be appropriate
  o Fully enclosed non-permeable shoes and long trousers
  o Laboratory coat or gown – in some situations a PVC apron may also be appropriate
• Decontaminate the work area, equipment and clothing after use.
• Only use in work area equipped with eye wash and safety shower.
• Ensure that the fume cupboard is regularly maintained, including monitoring the pH in the scrubbing system.

STORAGE

• Store in original container.
• Never store in glass or metal containers as HF is highly reactive with these materials. No metal lids.
• Use red tape to seal lids and identify the container.
• Store separately within a plastic spill tray.
• Regularly check for evidence of degradation of container and cap.
• Ensure that the storage location is secure, cool, dry and well-ventilated area, away from sources of heat, oxidising agents, alkalis, acids, metals, ceramics, organic materials, concrete and glass.
• Regularly (e.g. annually) confirm if HF is still required and where possible arrange disposal. No use for a period of 2 years or more is a clear trigger for disposal.

EMERGENCY AND FIRST AID RESPONSE

• Keep HF first aid supplies, a spills kit and PPE readily accessible, e.g. near the HF work area.
• Ensure calcium gluconate gel (2.5% calcium gluconate) and Caltrate tablets (500-1000mg calcium) are easily accessible and are not past their expiry date.

In the event of exposure:

• Treatment for actual or suspected exposure to HF should commence immediately. Symptoms of HF exposure can be delayed.
• Call a local first aider with appropriate knowledge of HF exposure. Seek immediate medical attention.
• For significant HF exposure, immediately contact emergency services call (000) and Security (9351 3333).

FURTHER REFERENCES

• Refer to a Hydrofluoric Acid Safety Data Sheet
• PACIA Code of Practice for Hydrofluoric Acid, 2006
• Worksafe Victoria, Hydrofluoric Acid HSS0149