Hydrofluoric Acid

May 2008

Hydrofluoric Acid (HF) is an ***extremely corrosive*** chemical. HF has unique properties that produce significant toxicity following exposures to seemingly **small amounts** and **low concentrations**.

What is HF used for?

HF is used at Steward Observatory for etching processes related to the mirror. Applying HF to the surface of the mirror allows the individual to detect and remove cracks that may be present on the glass.

Hazards associated with HF…

Due to its highly corrosive properties, HF is extremely hazardous to the lungs, skin, eyes, bones, and internal organs. In addition to causing a **severe chemical burn**, exposure to HF can result in additional serious problems. The fluoride ions present in HF can bind with calcium ions in **bone** causing a **depletion of calcium** and **extensive tissue destruction**.

Required Personal Protective Equipment…

Skin Protection: Neoprene rubber gloves, closed toe shoes, long pants, and long sleeve shirt

Eye Protection: Chemical safety glasses or full face shield

Respiratory Protection: Half-face respirator with lime green, organic vapor cartridges or a personal air purifying respirator (PAPR) for individuals with facial hair

Questions?? Please contact the IH intern 626-8761

References:

U.S. Department of Labor, Occupational Safety and Health Administration (1996). *Occupational Safety and Health Guideline for Hydrogen Fluoride*. Washington DC: U.S. Government Printing Office.

First Aid…

Skin: Thoroughly wash the exposed area for a minimum of **15 minutes**. While washing, remove any contaminated clothing. After washing, immediately apply calcium gluconate cream to the exposed skin. Notify emergency services.

Eyes: Irrigate the eyes for at least **15 minutes**, keeping eyelids separated and away from the eyeballs. Notify emergency services.

Inhalation: Immediately move the exposed person to an area with fresh air. Notify emergency services. If normal respiration has stopped, begin CPR until breathing resumes or emergency personnel arrive.

Ingestion: Drink large amounts of water. Do not induce vomiting. Milk or milk of magnesia may be given to victim to relieve pain. Notify emergency services.