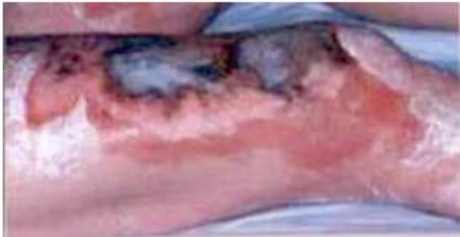


# Safety Slide 1 – Hydrofluoric (HF) Acid Hazards



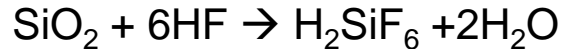
Note the flame pattern on my left leg caused by the splatter from acid hitting my right leg.



Right leg showing burns (white is calcium gluconate).



Used for etching of Si or SiO<sub>2</sub>



HF is less dissociated than most acids and deeply penetrates the skin.

Symptoms of exposure may be delayed for up to 24 hours, even with dilute solutions.

HF burns affect deep tissue layers, are extremely painful, and disfiguring.

The highly reactive fluoride ion circulates throughout the body and can cause multiple organ toxicity, including heart arrhythmias and death, if not treated.

[http://www.emsworld.com/web/online/Education/Hydrofluoric-Acid-/5\\$12949](http://www.emsworld.com/web/online/Education/Hydrofluoric-Acid-/5$12949)

<http://www.oseh.umich.edu/guidelines/hashp.shtml>

<http://ehs.mit.edu/site/content/hydrofluoric-acid>

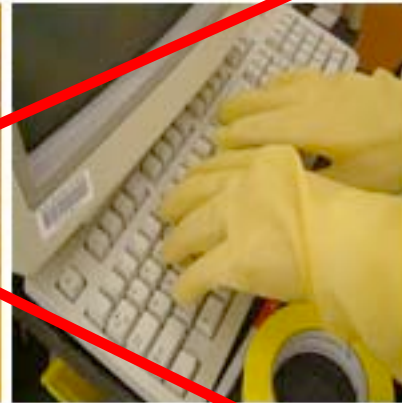
# Safety Slide 2 – Prevention of HF Hazards



**Hydrofluoric Acid Training:** All employees are required to be trained by the EHS Office before beginning work with HF. The training covers safe use, personal protective equipment, and decontamination procedures.



- Gloves with good resistance to HF
- Goggles AND face shield
- Apron with sleeves or gauntlets
- Long pants and closed toe shoes
- In the fume hood



# Safety Slide 3 – Emergency Response



Calgonate<sup>®</sup> Gel is an effective topical 2.5% calcium gluconate gel that is used in first aid response to hydrofluoric acid (HF) exposure or contact to the body. Calcium gluconate combines with hydrofluoric acid to neutralize the powerful fluoride ion.

*Rinsing may be limited to 5 minutes if Calgonate<sup>®</sup> Gel is available. If it is not available, continue flushing with water for at least 15 minutes or until medical treatment is given.*

*Gluconate Gel should be reapplied continually every 10-15 minutes and massaged into the skin until the ambulance arrives or medical treatment is given by a physician*

All laboratories using HF must have unexpired calcium gluconate decontamination gel on hand. The gel can be obtained at no cost from the EHS Office at 617-452-3477.

Any suspected exposure to HF should be immediately flooded with water, decontaminated with calcium gluconate gel, and treated at MIT Medical.