



Hydrofluoric acid (HF) is a corrosive chemical compound. Unlike other inorganic acids, it can produce serious health effects by any route of exposure. HF will attack all tissues of the body due to the fluoride ion's aggressive, destructive properties. Exposure to high concentrations may result in systemic toxicity due to calcium channel disruption.

Prevention of HF Exposure

- **Substitution:** If elimination is not possible, evaluate potential substitutes before making a purchase, and strictly limit order quantities to minimize the volume of HF in storage.
- **Engineering Controls:** Always handle inside a laboratory fume hood.
- **Administrative Controls:** Signs must be posted to alert all personnel that HF is being used in the area. Lab personnel using HF must complete [TC1650 - Hydrofluoric Acid training](#) and should **never work alone**.
- **Personal Protective Equipment (PPE):** Lab coats, gloves, and safety goggles, must be worn. If your protocol requires high dexterity, wear two pairs of nitrile exam gloves and change the outer pair frequently. Always wash your hands thoroughly after removing your gloves.



Fun FAQ

HF attacks natural rubber! When working with high volumes, always double-glove: wear an inner nitrile glove under an outer glove made of heavy neoprene, thick nitrile, or butyl.

Emergency Response to HF Exposure:

All HF exposures are a medical emergency. Immediately call 911 and



Calcium Gluconate Gel

Public Safety to arrange for medical transport. On the call, inform medical personnel about the type and extent of exposure. Each laboratory that stores and/or uses HF must assemble a "go-bag." Items to be included in the bag should include at a minimum: A change of clothes and shoes, two copies of the HF SDS, a copy of the [Print and Go sheet](#), 2.5% calcium gluconate gel (Calgonate), and 1% calcium gluconate eyewash solution.

- **Skin Exposure:**
 - Flush the affected area with copious amounts of water for at least 5 minutes.
 - If applicable, remove contaminated clothing immediately.
 - Apply calcium gluconate to the affected area, ensuring to don a new pair of gloves to avoid secondary burns while applying the gel.
- **Eye Exposure:**
 - Flush eyes for at least 5 minutes with copious amounts of water, then switch to using 1% calcium gluconate eyewash solution as the flushing agent until emergency personnel arrive.
 - DO NOT use calcium gluconate gel as a substitute. In case of unavailability, keep flushing eyes with water until emergency medical assistance arrives.
- **Inhalation:**
 - Move the victim to fresh air. *Exposure via inhalation is more problematic because there are no immediate decontamination procedures.*

Have more questions? Reach out to EH&S at Labsafety@columbia.edu or give us a call

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QR Code: HF Print and Go Sheet.



