

If YOU have an HF Exposure

- Immediately alert your buddy (the person working in your area who can help you) and proceed as follows, whether or not your buddy is available to help you.



Eye Exposure

1. Quickly get to an eyewash.
2. Flush with water for 15 minutes or until medical help arrives. Hold eyelids open. Take out contact lenses.
3. If only one eye was exposed, tilt your head so affected eye is lower for flushing.
4. Call 911 only after flushing for at least 5 minutes.
5. Do NOT use topical calcium gluconate gel in the eyes.



Skin Exposure

1. Quickly get to emergency shower or sink.
2. Begin flushing exposed skin.
3. Quickly remove contaminated clothing and jewelry. Flush for at least 5 minutes.
4. Liberally apply 2.5% calcium gluconate gel to affected area. Massage into skin. If no gel is available, continue flushing.
5. Call 911 only after first application of calcium gluconate or 5 minutes of flushing.
6. Reapply gel every 15 minutes until medical assistance can take over.
7. If your hand is the affected area, place a generous amount of gel in a clean nitrile glove, insert your hand in the glove and massage gel into affected area with other hand through the glove.



Respiratory Exposure

1. Quickly get to a fresh air source. Call 911.



Ingestion Exposure

1. Quickly get to a drinking water source.
2. Drink large amounts of water.
3. Do not induce vomiting. Call 911.

Spill Response – If spill is outside a chemical fume hood

- Evacuate the spill area, close doors and post NO ENTRANCE-TOXIC SPILL AREA sign.
- Call 911. Do not attempt clean up. A HAZMAT team must clean up the spill.

Spill Response – If spill is small and inside a chemical fume hood

Cleanup must be performed by lab personnel who have completed lab-specific HF spill response training, and have appropriate supplies and equipment available.

1. Wearing required PPE, place HF-compatible absorbent pad(s) on spill. After spill has been absorbed or partially absorbed, dispose of pads in HF waste. DO NOT use Floor-Dri, kitty litter, sand or vermiculite.
2. Place saturated calcium hydroxide solution* over spill area. Place another absorbent pad on spill area and soak up solution. Repeat this step until NO WHITE PRECIPITATE is formed.
3. Wipe down or spray any HF-contaminated tools in saturated calcium hydroxide solution. Then wipe down several times with water.
4. Place all HF spill cleanup materials in a plastic lidded container and label it specifically "HF Waste." Store waste in a secure location until pickup by EHS.

*Create a saturated solution of calcium hydroxide by adding 0.10-0.30 g of $\text{Ca}(\text{OH})_2$ to 30 ml distilled water, then mix. You should see some undissolved calcium hydroxide in the bottom of the vessel. If not, add a little more calcium hydroxide.

If you are the BUDDY of someone who has an HF Exposure

- Aid the exposed person first; deal with the spill later.
- Verbally coach the exposed person through the following steps and **avoid direct contact with him/her and the spill area until you can don PPE:**
 - Safety goggles
 - Chemical apron or lab coat
 - Neoprene gloves

- As fast as you can, help the exposed person as directed:

Eye Exposure

- Quickly get exposed person to an eyewash.
- Flush with water for 15 minutes or until medical help arrives. Hold eyelids open. Take out contact lenses.
- If only one eye was exposed, head should be tilted so affected eye is lower for flushing.
- Call 911 while flushing proceeds. Request immediate medical response and that hospital be notified.
- Do NOT use topical calcium gluconate gel in the eyes.

Skin Exposure

- Quickly get the exposed person to an emergency shower for upper arm/torso/leg-foot exposure, or to a sink or drench hose for hand/arm exposure.
- Help the exposed person flush exposure sites and remove contaminated clothing and jewelry as quickly as possible. Speed and thoroughness are essential; modesty must be set aside.
- NOTE THE TIME WHEN FLUSHING BEGINS SO YOU WILL KNOW WHEN FLUSHING CAN STOP. Flush for at least 5 minutes. Flushing should precede the use of neutralization products (calcium gluconate).
- After flushing, liberally apply 2.5% calcium gluconate gel to affected area. Massage into skin. If no gel is available, continue flushing.
- Call 911 only after first application of calcium gluconate, or after 5 minutes of flushing. Request immediate medical response and that hospital be notified.
- Reapply gel every 15 minutes until medical responders can take over.
- If hand is the affected area, place a generous amount of gel in a clean nitrile glove, insert hand in the glove and massage gel into affected area through the glove.

Respiratory Exposure

- Quickly help the exposed person get to a fresh air source.
- Call 911. Request immediate medical response and that hospital be notified.

Ingestion Exposure

- Quickly help the exposed person access a drinking water source.
- Have exposed person drink large amounts of water. Do not induce vomiting.
- Call 911. Request immediate medical response and that hospital be notified.

- When emergency responders arrive and start giving medical attention to the exposed person, promptly:
 - Provide responders with paper copies of the SDS for the HF product being used, and the SOP being used.
 - Report the exposure to the supervisor of the exposed person.
 - Inform other personnel in the area of the HF spill, and restrict access to spill area.
 - Initiate spill cleanup only if you are trained and equipped, and if spill is small and contained in hood.

Safety Supplies for HF work

2.5% Calcium Gluconate Gel (Topical)

- Always keep nearby during HF work.
- Gel has limited shelf life—always check expiration date. Do not work with HF if gel has expired.
- Be extremely careful when applying gel to a victim's exposure site to avoid self-exposure to HF.
- Calcium chloride is not a substitute. Do not use calcium chloride.
- Vendors: AirGas, Amazon

Personal Protective Equipment and Supplies for Spill Clean-Up

- Lab coat
- Neoprene gloves (or gloves of other material that protects from HF as specified by manufacturer's glove selection guide)
- Splash goggles or safety glasses with side shields
- Face shield
- HF Spill Kit and First Aid Kit
- Saturated solution of calcium hydroxide for surface/equipment decontamination (To make: Add 0.10-0.30 g of $\text{Ca}(\text{OH})_2$ to 30 ml distilled water and mix. If you don't see some undissolved calcium hydroxide in mixture, add a little more calcium hydroxide.)