

Hydrofluoric Acid Exposure Emergency Response

In order to prevent cross contamination, the victim of hydrofluoric acid (HF) exposure should perform the following actions on him/herself if possible. If the victim requires assistance, anyone present can do so but they should be extremely careful not to contaminate themselves in the process. Any person assisting should use utility-grade neoprene or nitrile gloves, safety glasses and other safety equipment as necessary.

Skin Exposure:



Immediately washing off the acid is a priority!

1. Immediately wash all affected areas with water. While flushing with water, remove all clothing or jewelry that could trap HF.
2. While the victim is being rinsed with water, someone should call 911 and inform them that a person has been exposed to hydrofluoric acid.
3. Rinsing may be limited to 5 minutes if Calgonate® Gel (2.5% calcium gluconate) is available. If 2.5% calcium gluconate gel is not available, continue flushing with water for at least 15 minutes or until medical treatment is given.
4. Apply calcium gluconate gel freely and massage it into the affected site. Apply the gel as soon as the washing is done. Affected area does not need to be dried prior to application.
5. Calgonate® Gel should be reapplied continually every 10-15 minutes and massaged into the skin until medical treatment is given by a physician or EMS.
6. Take note of and provide the following information to the EMS team, and/or physician.
 - a. The concentration of the HF and its SDS.
 - b. Date and time of exposure, duration of exposure, and how it occurred.
 - c. The time when calcium gluconate gel was first applied to the contaminated area, and how many times it was applied in total.
 - d. Body parts exposed, and the percent of body surface area affected.
 - e. Summary of first aid measures given.

Vapor exposures can cause skin and mucous membrane burns, as well as damage to pulmonary tissue. Treat vapor burns the same way as liquid HF burns.

Eye Exposure:

Because HF penetrates deep into tissue, exposure of hydrofluoric acid solution or vapor to the eye can produce more extensive damage than other acids in similar concentrations. Immediate action is critical.

1. Immediately flush eyes for at least 15 minutes with cool flowing water. Hold the eyelids open and away from the eye during irrigation to allow thorough flushing of the eyes.
2. While the victim's eyes are being rinsed with water, someone should call 911 and inform them that a person has had an eye exposure to hydrofluoric acid.
3. Continue to rinse in eyewash until EMS arrives.

Inhalation Exposure:

Immediately move the victim to fresh air and get medical attention.

1. Contact 911 and inform dispatcher that the exposure involves HF.
2. Keep victim warm, quiet, and comfortable while waiting for EMS to arrive.
3. Always seek medical attention because inhalation of HF may cause swelling in the respiratory tract up to 24 hours after exposure.

If you work with hydrogen fluoride or hydrofluoric acid, make certain you and your co-workers familiarize yourselves with these first aid procedures and keep a supply of 2.5% calcium gluconate ointment in the work area (check expiration dates). This is available free-of-charge from Yale Environmental Health and Safety.