

Geoscience guidelines for *Hydrofluoric acid (HF)*

The following rules apply to anybody working in the Geoscience laboratories.

It is the responsibility of the Department of Geoscience Occupational Health and Safety organization to prevent accidents of any kind. The following HF safety policy must be respected by everyone. This policy applies to all concentrations and volumes of HF. The HF policy is a supplement to personal instructions, protocols, and risk assessments.

HF acid¹ has several physical, chemical, and toxicological properties² that make it especially hazardous to handle: 1) HF permeates easily and quickly through the skin and into the tissues and bones in the body where it causes damage to the cells. 2) Breathing HF fumes can damage lung tissue and cause swelling and fluid accumulation in the lungs. 3) Skin contact with HF may cause severe burns: You may not feel immediate pain when exposed to HF. Skin ulcers may form after several hours. HF can be deadly even at small volumes.

Prior Instruction:

- Working with HF is only allowed after thorough introduction to its properties and training in proper procedures for use, emergencies, spills, and disposal.
- Only Geoscience staff members experienced with HF are allowed to give the above instruction.
- Guests must be instructed and authorized by an experienced lab technician. This also applies to guests who have previous HF experience. Everybody must be covered by their own insurance.

Working with HF is at no time allowed:

- For pregnant and breastfeeding women.
- For students (bachelor and master level) and students hired temporarily as laboratory assistants.
- Outside normal work hours (18-07), on weekends or holidays – staff members included.

Working alone with HF is allowed:

- During normal work hours (07-18) – only staff members employed at Geoscience. (incl. employed PhD students).

Working alone precautions:

- There are no stationary phones in the laboratories: Always bring a charged cellphone for use in case of an emergency.
- Notify a person nearby who must be able to come to your immediate rescue in case of an emergency and act according to the local lab protocol.

Avoid contamination:

- Always work with HF in designated HF fume hoods or workstations.
- When working in HF fume hoods, keep your workspace clear from other processes.
- If you transport more than ½ liter HF from one lab to another, use a cart and have somebody help you open doors and handle other objects for you.
- Never leave any objects contaminated with HF where other people may pick them up.
- All containers for HF waste must be labelled “HF waste”, concentration and waste group “X10”.
- When throwing away empty HF bottles, rinse them thoroughly and put them in a sealed trash bag in the normal trash. Always rinse any equipment and utensils that have been in contact with HF with plenty of water.
- Ensure that all workstations and especially containers with HF are clearly labeled according to the European CLP regulation.

BE AWARE - you may jeopardize the health and safety of others by incorrect use of ventilation, spill, contamination, disposal, and poor labeling.

¹ <https://echa.europa.eu/substance-information/-/substanceinfo/100.028.759>

² <https://emergency.cdc.gov/agent/hydrofluoricacid/basics/facts.asp>