

HF: Hydrofluoric Acid Chemical Spill Response Guide

In the event of a hydrofluoric acid spill, follow: **RESCUE, CONTAIN, REPORT, SECURE, CLEAN UP**

ALL work using hydrofluoric acid must be done inside a chemical fume hood and **ALL** hydrofluoric acid use areas must be equipped with a hydrofluoric acid spill kit.

RESCUE

- Alert others in the area of an ongoing hydrofluoric acid chemical spill and keep others away from the spill area.
- Help others evacuate by providing assistance. Help remove any victims from the spill area to fresh air but do not endanger yourself by entering a potentially toxic atmosphere or failing to wear appropriate personal protective equipment (PPE).
- Before exiting the room or area, inspect your clothing and shoe bottoms for signs of contamination, such as saturation or discoloration. Remove contaminated clothing and place in plastic bags if possible and leave the clothing or bag of clothing near or inside the spill area or room.
- If hydrofluoric acid contacts the skin, eyes, or other body part, **IMMEDIATELY** request medical assistance by calling University Police Department (UPD) at **911** from an SJSU phone OR **408-924-2222** from all other telephones.
- Inform UPD that hydrofluoric acid was involved in the exposure & provide details about the injured person.
- If **hydrofluoric acid contacted the skin**, flush contaminated skin with water or a safety shower for 5 minutes then apply Calcium Gluconate cream (2.5-33%) to the exposed area of skin. If no cream is available, flush continuously with water or a safety shower.
- If **hydrofluoric acid is in the eye**, immediately use a safety eyewash to flush eyes for 15 minutes or more.
- If **hydrofluoric acid is inhaled**, immediately go to an area with fresh air and breathe fresh air until help arrives. Never return to an area of a chemical spill once you have vacated the contaminated area.



CONTAIN

- Contain the spill to the fume hood, area, or room if possible. If it can be done safely, put down absorbent pads to stop or slow the spread of an ongoing release. This helps to minimize the spill area by preventing chemicals from spreading to floor drains or sinks, cracks or crevices, onto sloped or porous surfaces, or any other inaccessible or hard-to-access areas.
- Do not allow chemicals to go down sink or floor drains by plugging sinks/drains if it can be done safely.
- If the spill is no longer actively spreading, simply isolate the area by closing the chemical fume hood, closing interior room doors, or closing hallway and/or exterior doors to prevent the spread of hazardous fumes and vapors.

REPORT

- For small spills (<1 gallon), contact your Department Safety Officer or Leadership to report the spill and request additional assistance.
- Provide important information, such as your name, telephone number, physical location from which you are reporting, physical location of the incident/spill (e.g. building and room number), time and type of incident (e.g. chemical spill with or without injury), quantity of chemical involved (if known), the extent and severity of any injuries, presence of additional hazards in the area, and the safest route to approach spill area.

SECURE

- If can be done safely, work with your coworkers to block entrances to the spill area in order to prevent others from entering until emergency responders arrive or the spill can be cleaned up.
- Caution tape and signs can serve as useful tools in preventing others from entering the contaminated spill area.

Need Help?

- Ask the primary investigator or instructor
- Ask the department/college safety staff
- Ask SJSU Environmental Health & Safety
 - Environmental Compliance Specialist: david.griffith@sjsu.edu
 - Director: ehs@sjsu.edu; 408-924-1969

HF: Hydrofluoric Acid Chemical Spill Response Guide cont.

CLEAN UP

For small chemical spills under 100 milliliters (mL) and are not actively spreading, as determined by your professional judgment in conjunction with Department Safety Officer or Leadership, proceed to clean up the spill by doing the following:

- Locate the HF chemical spill kit staged in the area to obtain necessary spill response supplies and PPE.
- Ensure that all responders are wearing long pants, a long sleeved shirt or lab coat, and closed-toe shoes.
- Put on two sets of nitrile gloves (double glove), an acid resistant apron, splash resistant goggles, and a face shield.
- Put on shoe covers or cover your shoes with plastic bags while considering that this can create a slipping hazard. Never walk around a spill area without shoe covers and never walk inside or through the contaminated spill area.
- Apply magnesium sulfate or other hydrofluoric acid neutralizing agents to the spill area. If compatible and safe to do so, follow the package instructions.
- Always work from the outside of a spill area to the center of the spill to avoid spreading contamination.
- If broken glass is present, carefully collect the glass using thick pieces of paper, tongs, tweezers, other tool to prevent injury. Tape jagged broken glass shards and pieces and place them inside the same bag or container with other spill materials.
- Absorb liquids with chemically compatible spill absorbent pads and sweep up any remaining powders using a dust pan and broom.
- Add sodium bicarbonate or magnesium oxide to any absorbent and place in a plastic container for disposal. Wash the spill area with sodium bicarbonate solution or other appropriate neutralizer and/or cleaner.
- Do not use products containing silicone, such as sand or vermiculite, as this will create silicone tetrafluoride, an odorless toxic gas.
- Wipe down surfaces with a damp, chemically compatible sponge or paper towels and place it in a waste bag or container.
- While wearing protective gloves, remove shoe covers and other PPE then combine with other waste debris.
- Before exiting the room or area, inspect your clothing and shoe bottoms for signs of contamination. Remove any contaminated clothing and place them in a separate bag from the waste debris and leave near the spill area. Leave bag of contaminated clothing near or inside the spill area or room then thoroughly wash your hands.
- Department Safety Officer/EHS will assist in determining if spill area is clean enough to resume normal activities.
- Label bags of spill debris and contaminated clothing with a SJSU Hazardous Waste Label. Identify waste by listing "Acidic Spill Debris" as the General Description, the type of acid under Contents, and write the date of the spill as the accumulation start date.
- Report the spill to EHS immediately if air monitoring is needed and ensure access to the spill area is restricted. If air monitoring is not needed, report spill to EHS within 48 hours and to coordinate pick-up of labeled spill debris.

Larger Spills Over 100mL, in a Confined Space, or an Area Without Adequate Ventilation

Immediately contact UPD/EHS for larger spills over 100mL, spills in a confined space, or spills in an area that lacks adequate ventilation. An outside chemical spill response contractor may be needed to appropriately respond to the incident as well as to complete the final clean-up and decontamination of the area.

Hydrofluoric Acid Spill Kit Required Contents – All Areas with HF Must Have an HF Spill Kit

- Calcium Gluconate (2.5-33%) – 1 tube (Check expiration date and order more before the old tube expires!)
- Splash Resistant Goggles – 2 each
- Face Shield – 1 each
- Acid Resistant Apron – 2 each
- Nitrile Gloves – 10 pairs (Sizes XL and M)
- Butyl Rubber or Neoprene Gloves with Gauntlet – 2 pairs
- Magnesium Sulfate or other approved hydrofluoric acid neutralizing agents – 1 lb.
- Universal Absorbent Pads – 1 box or 20 squares
- Dustpan and Brush Set – 1 set
- Plastic Bags (5-gallon or 30-gallon size) – 2 each
- Plastic Scoop – 1 each

