Environmental
Health and Safety

Laboratory Safety Fact Sheet: Hydrofluoric Acid (HF) Fume Hood Use

The fact sheet below gives information on the importance of hydrofluoric acid in a fume hood.

What is Hydrofluoric Acid (HF)?

Hydrofluoric acid (HF) is a highly toxic and corrosive acid that can penetrate skin and cause severe burns and systemic toxicity, including life-threatening electrolyte imbalances.

HF vapors are also hazardous and must be controlled using a **properly functioning chemical fume hood.**

Why Use a Fume Hood for HF?

- Prevents inhalation of toxic HF vapors
- Protect users from splash and exposure risks
- Controls release of corrosive fumes into the laboratory

HF must ALWAYS be used in a certified, functioning chemical fume hood.

Before Using HF in a Fume Hood

- Complete “A Deep Dive into Hydrofluoric Acid (HF)” training on Genius
- Review Safety Data Sheet (SDS) and SOP
- Verify hood is:
    - ON and certified
    - Airflow within acceptable range
    - Sash at proper operating height
- Ensure Calcium Gluconate Gel is readily available
- Recommended to work with a buddy present or nearby

Required PPE for HF Use

- Lab coat (acid-resistant preferably)
- Apron (acid-resistant) when handling concentrations above 30%
- HF-resistant gloves (Neoprene is a common HF resistant material but check with the manufacturer for HF resistance before purchasing) or double nitrile glove
- Safety gl

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Safe Work Practices in the Hood

- Keep all work at least 6 inches inside the hood
- Keep sash as low as possible (below face level)
- Never place your head inside the hood
- Use secondary containments (plastic trays)
- Use HF-compatible materials (plastic-never glass)
- Minimize quantities and avoid clutter
- Keep airflow unobstructed (do not block baffles)
- Clearly label all containers: “Hydrofluoric Acid – Extremely Hazardous”

Fume Hood Issues

- If airflow alarm activates or hood fails:
    - **Stop working immediately**
    - Close containers and sash
    - Leave the area if necessary
    - Notify EHS

Prohibited Practices

- Using HF outside of a fume hood
- Use glass containers
- Blocking hood airflow
- Storing HF in the fume hood long-term

Emergency Response

Skin Contact

1. Call Georgia Tech PD @ 404-894-2500 and/or EHS @ 404-216-5237
2. Immediately flush with water for 5 minutes.
3. Apply Calcium Gluconate Gel to affected area with nitrile gloves.
4. Seek emergency medical care immediately—even small exposures can be fatal.

Eye Contact

1. Call Georgia Tech PD @ 404-894-2500 and/or EHS @ 404-216-5237
2. Flush eyes with water at eyewash station for at least 15 minutes.
3. Hold eyelids open.

4. Seek immediate emergency medical care.

Inhalation

1. Call Georgia Tech PD @ 404-894-2500 and/or EHS @ 404-216-5237
2. Move victim to fresh air immediately.
3. Seek immediate emergency medical care.

Ingestion

1. Call Georgia Tech PD @ 404-894-2500 and/or EHS @ 404-216-5237
2. Do not induce vomiting.
3. Rinse mouth with water.
4. Seek immediate emergency medical assistance.

Contact EHS:

For spills, exposure or questions:

EHS Emergency Number: 404-216-5237

Email: lab-chemsafety@gatech.edu