

SAFETY TRAINING RECORD  
Department of Physics Purdue University

rev Feb 2011A

Date of training: 9/26/2012 Duration: 1 h 0 min

All information must be complete.

Person receiving training:

J a n e	E i n s t e i n
first name (or as much as fits)	last name (or as much as fits)


e i n s t e i n @ p u r d u e . e d u
career account "alias;" none are more than eight characters

look up any Purdue alias at  
<https://www.itap.purdue.edu/directory/>

Supervisor of person receiving training:

G e o r g e	J a c k s o n
first name (or as much as fits)	last name (or as much as fits)

If sponsored research, must be faculty P.I., in all others cases must be faculty or management level staff.

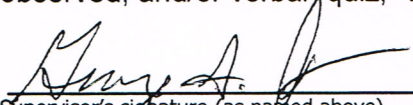
Person conducting training George S. Jackson   
print sign

List and describe training topics & procedures. Include quantity limits if appropriate, working hours, working alone, PPE, as appropriate. Attach protocol on separate page with staple if desired.

☒ check here if separate page(s) attached

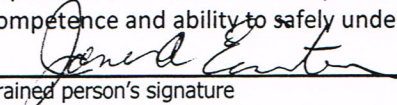
Does this training have to be repeated at any regular interval? Circle: Yes No Interval \_\_\_\_\_

How was competence of the trained person assessed? (e.g. required to perform procedure while observed, and/or verbal "quiz," written quiz, attached)

  
Supervisor's signature (as named above)

9/26/2012  
date

Supervisor affirms that trained person has demonstrated, and is expected to at all times continue to demonstrate competence and ability to safely undertake the procedures described.

  
Trained person's signature

September 26, 2012  
date

Signature affirms that trained person has completed training successfully and understands and will follow all requirements for safety and health. Trained person also agrees to stay within the confines outlined if any, and to make arrangements for additional training when new/different work, chemical, or hazards are introduced to the work.

# Standard Operating Procedures for the use of HF in Physics Room B24

Updated 2012-09-26 by George Jackson

Before working with HF the first time you need to familiarize yourself with all of the material in the HF binder. This material consists of the reading materials required by the Chemistry Department.

If new to working with HF you will **not** perform any HF chemistry unless supervised by an experienced chemist.

Note: This SOP applies to our standard  $\text{CaF}_2$  procedure where 5 ml of 48% HF is dripped into a 50 ml centrifuge tube directly from the original bottle which comes with a drip spout. The drip spout should never be removed from the bottle.

## Room Rules

Make sure the outer door to the room is unlocked.

Have water running (not fast) in a sink external to the fume hood to clean gloves if needed.

Double-check to make sure the tube of calcium gluconate is where you expect it to be.

Make sure both large and small Kimwipes are handy to mop up spills; Kimwipes can be found on the shelf where resin is kept. It is immediately behind you when working in the hood. Calcium carbonate to neutralize the acids and complex the  $\text{F}^-$  may also be found on this shelf.

Personal Protective Equipment (PPE) required for the use of HF:

Safety glasses

Natural rubber or chemical resistant nitrile gloves

Nitrile examination gloves can be doubled over the rubber gloves for grip, if necessary

Purple, Neoprene, whole body apron with long sleeves

Inspect your gloves between samples to make sure no HF is present on them. If necessary, wipe off with a kimwipe and then run hands under the running water in the sink to rinse off any residual HF. Change gloves as needed.

When finished, make sure gloves are free of any HF (or other acid) before taking off other PPE.

Occasionally the ink on the HF bottle should be examined since it undergoes a color change if HF is present on the outside of the bottle. If a color change is observed the bottle should be rinsed under the sink with copious amounts of water.



## Emergency Procedures for the use of HF in Physics Room B24

In case of skin contact, eye contact, inhalation, or ingestion, the procedures in Honeywell's Recommended Medical Treatment for Hydrofluoric Acid Exposure have been copied from that document and are in the first section of the HF binder. Familiarize yourself with these procedures to the point that you do not need to reference them in an emergency. All emergencies dial 911.

### Skin Contact: Outline of Procedures

1. Immediately flush affected area with large amounts of running water.
2. Remove contaminated clothing during flushing.
3. Flush for 5 minutes.
4. Alert first aid or medical personnel.
5. Immediately after thorough washing, use **one** of the measures below:
  - a. Begin soaking the affected areas in iced 0.13% benzalkonium chloride solution. Compresses should be changed every two to four minutes. Compresses should be continued until pain is relieved or until more definitive medical treatment is provided.
  - b. Start massaging 2.5% calcium gluconate gel into the burn site. Apply gel frequently and massage continuously until pain and/or redness disappear or until more definitive medical care is given. The individual applying the calcium gluconate gel should wear gloves to prevent a possible secondary HF burn.
6. After treatment of burned areas is begun, the victim should be examined to ensure there are no other burn sites which have been overlooked.
7. Arrange to have the victim seen by a physician. **During transportation to a medical facility or while waiting for a physician to see the victim, it is extremely important to continue the benzalkonium chloride (Zephiran) soaks or compresses or continue massaging calcium gluconate gel.**

### Eye Contact: Outline of Procedures

1. Immediately flush the eyes for at least 15 minutes with large amounts of gently flowing water. Hold the eyelids open and away from the eye during irrigation to allow thorough flushing of the eyes.
2. Take the victim to a doctor, preferably an eye specialist, as soon as possible. Ice water compresses may be applied to the eyes while transporting the victim to the doctor.

### Inhalation: Outline of Procedures

1. Immediately move victim to fresh air and get medical attention.
2. Keep victim warm, quiet and comfortable.
3. If breathing has stopped, start artificial respiration at once.
4. 100% Oxygen should be administered as soon as possible by a trained individual. Continue oxygen while awaiting medical attention unless instructed otherwise by a physician.
5. A nebulized solution of 2.5% calcium gluconate may be administered with oxygen by inhalation.
6. Do not give stimulants unless instructed to do so by a physician.
7. The victim should be examined by a physician and held under observation for at least a 24 hour period.
8. Vapor exposures can cause skin and mucous membrane burns as well as damage to pulmonary tissue. Vapor burns to the skin are treated the same as liquid HF burns.

### Ingestion: Outline of Procedures

1. Have the victim drink several large glasses of water or milk to dilute the acid. Do not induce vomiting. Do not give emetics or baking soda.
2. Give several glasses of milk or several ounces of milk of magnesia, Mylanta®, Maalox®, etc or grind up and administer up to 30 Tums™, Caltrate® or other antacid tablets with water.
3. Get immediate medical attention. Ingestion of HF is a life-threatening emergency.

### When Emergency Personnel Arrive:

Give them a copy of Honeywell's Treatment of Hydrofluoric Acid (HF) Exposure Quick Reference

Relate all steps that you have taken up to that point.