



COLUMBIA UNIVERSITY
ENVIRONMENTAL HEALTH AND SAFETY

Post Exposure **PRINT & GO** Sheet

Hydrogen Fluoride post-exposure guidance

Created: 8/25/2016

Revised: 1/14/2019

<https://research.columbia.edu/sites/default/files/content/EHS/Homepage/HFPrintAndGo.pdf>

What are print and go sheets?

Following an occupational exposure to the agent identified above, this information sheet identifies the immediate “first aid” actions that should be taken. A medical evaluation should be sought immediately following the exposure. The guidance sheet provides information that medical personnel can reference but does not provide individualized medical care or treatment. This sheet should be printed and taken to the medical provider. Also, display your Columbia University ID card while visiting the medical provider.

Agent: Hydrofluoric Acid (HF) is an inorganic acid which is derived from dissolving hydrogen fluoride in water. HF is a noncombustible, colorless, fuming liquid or gas with a strong, irritating odor and has a low permissible exposure limit (in air. HF readily dissolves in water to form colorless hydrofluoric acid solutions; dilute solutions are visibly indistinguishable from water. It is present in a variety of over-the-counter products at concentrations of 6% to 12%.

Synonyms include hydrogen fluoride, fluoric acid, hydrofluoride, and fluorine monohydride.

Routes of Exposure: Inhalation, ingestion, absorption (eyes), dermal contact

Immediate actions to be taken in the event of an exposure:

- Inhalation – Remove to fresh air. Remove source of exposure if possible. Seek medical attention.
- Ingestion – SDS typically advises to avoid inducing vomiting; rinse mouth with water and seek immediate medical attention.
- Absorption (eyes) – Rinse eyes cautiously with water at nearest eyewash station for fifteen minutes. Seek medical attention
- Dermal contact – Remove contaminated clothing and rinse affected area at deluge hose or safety shower for 15 minutes. Apply calcium gluconate first aid gel to affected area immediately after rinsing. Seek medical attention.

Post-exposure Medical Surveillance:

If exposure occurs Mon. to Fri., 8:00 am - 4:00 pm: Employees from CUIMC, Morningside and Manhattanville campuses go to the Workforce Health and Safety (WHS) clinic located at Harkness Pavilion 1 South 176 Fort Washington Ave (212-305-7590). CUIMC students go to Student Health Services at 60 Haven Avenue (212-305-3400). Morningside students go to Columbia Health in the John Jay Building (212- 854-7426). For after-hours exposure, go to the New York Presbyterian Hospital or Mount Sinai St. Luke's Hospital (212-523-3335) Emergency Room (ER). Lamont Doherty Earth Observatory Staff should call 9-911 to connect with outside medical staff then call 555 from any campus phone or (845) 359-2900 to notify Safety/Security office to expect the emergency responders. Give this sheet to the physician so they understand that you may have just been exposed to Hydrogen Fluoride/Hydrofluoric Acid, and this is a medical emergency.

Information to be conveyed to Medical Provider – In all cases, a copy of the safety data sheet for the material used should be provided. Indicated the rough volume/weight of exposure. If air measurements were taken, provide average concentration to medical provider.

Countermeasures/tests available to Physician – Physician should consult the National Institute for Occupational Safety and Health's guide for Hydrogen Fluoride/Hydrofluoric Acid - http://www.cdc.gov/niosh/ershdb/emergencyresponsecard_29750030.html

- Affected individuals should be decontaminated prior to treatment to avoid secondary exposure. All clothing should be removed and placed in a labeled 6mil polyethylene bag.
- For eye exposures, an ophthalmologist must be consulted. For minor exposures with very dilute hydrofluoric acid (HF): mix 10 mL of 10% calcium gluconate with 100 mL of normal saline to give an approximately 1% calcium gluconate solution. With a syringe, irrigate the eye intermittently for a period of 15 to 30 minutes or until relief of pain occurs. For more serious hydrofluoric acid (HF) eye burns, mix 50 mL of 10% calcium gluconate with 500 mL of normal saline to give an approximately 1% calcium gluconate solution.
- For inhalation exposure administer a 2.5% calcium gluconate solution as a nebulized treatment with oxygen.



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- For dermal exposures, Injection of 5% calcium gluconate is indicated as the primary medical treatment for large burns.
- For ingestion, some cases may require endoscopic examination. Do not administer emetics or charcoal.

Follow-Up Medical Surveillance – Consult NIOSH Guidelines. EH&S should conduct full accident investigation and provide follow up exposure monitoring as required and necessary in laboratory.

Documentation and Reporting – All exposure incidents must be documented and warrant an accident investigation. Any loss of limb, eye, or admittance into hospital requires a notification to OSHA within 24 hours of incident.

Additional Resources

- Columbia University Hydrofluoric Acid Policy - <http://ehs.columbia.edu/HydrofluoricAcid.pdf>
- *Safety Data Sheets* are manufacturer specific and can be printed from ChemWatch - <https://jr.chemwatch.net/chemwatch.web/home>
- NIOSH Guide Reference - <http://www.cdc.gov/niosh/npg/npgd0334.html>

Contact information:

Environmental Health & Safety (EH&S) - Ask for an Occupational Safety Specialist. Mon. - Fri: 9 am - 5 pm. Medical Center - (212) 305-6780

Public Safety can contact an EH&S Occupational Safety Specialist after business hours. Medical Center - (212) 305-7979.

Morningside - (212) 854-5555. Manhattanville - (212) 853-3333