



HYDROGEN FLUORIDE

Agent information: Hydrogen fluoride (HF), also known as hydrofluoric acid, is a chemical compound used to make refrigerants, herbicides, pharmaceuticals, high-octane gasoline, plastics, and other electrical components. It is also used for etching glass and metal. It may exist as a colorless gas, as a fuming liquid, or it may be dissolved in water. A person may be exposed to this chemical during accidental releases caused by natural disasters, in a workplace that uses hydrogen fluoride, or as a chemical terrorism agent.

Route of exposure: Inhalation, ingestion, or skin or eye contact.

Signs and symptoms: Hydrogen fluoride is absorbed quickly through the skin and body tissues. It is irritating to the skin, eyes, and mucous membranes. It is a corrosive chemical that can cause immediate or delayed onset of deep, penetrating injury.

Systemic effects can occur from all routes of exposure and include pulmonary edema, nausea, vomiting, gastric pain, and cardiac arrhythmia. Swallowing a small amount of highly concentrated HF will affect major internal organs and be fatal. Long term effects of acute HF exposure include chronic lung disease, severe scarring, persistent pain, bone loss, blindness, and narrowing of the esophagus.

Protective measures: Utilize appropriate Level personal Protective Equipment (PPE) as identified by the Environmental Protection Agency and Hazmat protocols. These include Self-Contained Breathing Apparatus with Level A protection.

Victims exposed only to hydrogen fluoride vapor do not pose substantial risks of secondary contamination. However, victims whose clothing or skin is contaminated with liquid hydrogen fluoride, solution, or condensed vapor can secondarily contaminate response personnel by direct contact or through off-gassing vapor.

Prophylaxis: N/A

Emergency Medical Services and Preparedness Section
24/7 Emergency Contact Number: 1-888-295-5156
Contact Number: 302-223-2999

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- Treatment:** Rapid clothes removal and decontamination is critical due to hydrogen fluoride's rapid skin penetration and serious toxicity. Calcium gluconate containing gels, solutions, and medications are used to treat HF poisoning. The intense pain of hydrogen fluoride burns should not be suppressed with local anesthetics because the degree of pain is an indicator of treatment efficacy. Supportive care.
- Reporting:** Any suspect cases should be reported immediately to the Division of Public Health, 1-888-295-5156 (24/7 coverage).
- Additional information:** For additional information, visit the Centers for Disease Control and Prevention website:
<https://www.cdc.gov/niosh/>.