

# Treatment of Hydrofluoric Acid (HF) Exposure

## Quick Reference

NOTE: In addition to the usual medical history, the physician should obtain the following information: concentration of HF, date and time of exposure, duration of exposure, how exposure occurred, body parts exposed/affected, first aid measures instituted (what, when, how long). Injuries due to dilute HF solutions or low concentrations of vapors may result in delays in clinical presentation up to 24 hours following exposure.

SKIN BURNS		EYE EXPOSURE	INHALATION		INGESTION
<b>FIRST AID</b>					
<b>CONCENTRATED HF</b>  Water Wash <b>THEN</b> Iced Benzalkonium Chloride* 0.13% Soaks <b>OR</b> Calcium Gluconate 2.5% Gel	<b>DILUTE HF</b>  Water Wash <b>THEN</b> Iced Benzalkonium Chloride* 0.13% Soaks <b>OR</b> Calcium Gluconate 2.5% Gel	<b>ALL HF</b>  Water Wash <b>OR</b> Saline Wash	<b>CONCENTRATED HF</b>  Oxygen <b>AND</b> 2.5% Calcium Gluconate* by Nebulizer	<b>(Mild Exposures)</b> <b>DILUTE HF</b>  Oxygen <b>THEN</b> Consider 2.5% Calcium Gluconate* by Nebulizer	<b>ALL HF</b>  <b>DO NOT INDUCE VOMITING</b>  Milk or Water <b>THEN</b> Milk of Magnesia <b>OR</b> Mylanta®+
<b>MEDICAL TREATMENT</b>					
<b>CONCENTRATED HF</b>  Debride (if necessary) <b>THEN</b> Continue Soaks <b>OR</b> Calcium Gluconate 2.5% - 5% Injection <sup>2,4</sup> <b>AND</b> Observe for/Treat Systemic Effects <sup>3</sup> (especially if > 25 sq. in.)	<b>DILUTE HF</b>  Debride (if necessary) <b>THEN</b> Continue Soaks <b>OR</b> Calcium Gluconate 2.5% Gel <b>OR</b> Calcium Gluconate 2.5% - 5% Injection <sup>2,4</sup> Systemic Effects <sup>3</sup> Unlikely	<b>ALL HF</b>  Topical Tetracaine Hydrochloride <b>THEN</b> 1% Calcium Gluconate Irrigation* <b>AND</b> Consult Ophthalmologist	<b>CONCENTRATED HF</b>  Continue Calcium Gluconate by Nebulizer Observe and Treat for Respiratory Distress, Bronchoconstriction, Pulmonary Edema, Systemic Effects <sup>3</sup> (Inhaled Steroids and/or Bronchodilators as Needed)	<b>DILUTE HF</b>  Continue Calcium by Gluconate Nebulizer  Observe  Serious Effects Unlikely  Inhalation of HF Fumes from Diluted Acid is Uncommon	<b>ALL HF</b>  Lavage with Calcium Chloride or Calcium Gluconate <b>AND</b> Treat Systemic Effects <sup>3</sup>

1. This is a brief summary of First Aid and Medical Treatment measures. The text of the brochure "RECOMMENDED MEDICAL TREATMENT FOR HYDROFLUORIC ACID EXPOSURE" must be consulted for more complete information.

2. 2.5% calcium gluconate injections must be used if the soaks or gel do not significantly relieve pain in 30-40 minutes. Injections may also be used as the primary treatment, especially for larger and/or deeper burns.

3. Systemic effects include hypocalcemia, hypomagnesemia, hyperkalemia, cardiac arrhythmias, and altered pulmonary hemodynamics. TREATMENT includes cardiac monitoring, monitoring serum calcium, fluoride, magnesium, and electrolytes; administration of IV calcium gluconate, correcting magnesium and electrolyte imbalance, and, in extreme cases, hemodialysis.

4. Calcium gluconate is normally supplied in ampules containing 10% calcium gluconate. Concentrations less than 10% are obtained by diluting with normal saline.

For additional reference charts or information on properties, storage and handling, or medical treatment for hydrofluoric acid, contact:

Honeywell Specialty Materials  
 101 Columbia Road  
 Morristown, NJ 07962

In the event of a medical emergency with this product, call the 24-hour Honeywell emergency telephone number:  
 800-498-5701

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This foldout chart is also available as a laminated 15" x 23" wall poster.

\* Benzalkonium chloride is a high molecular weight quaternary ammonium compound available as Zephiran® a Registered Trademark of Sanofi Pharmaceuticals, New York, NY 10016  
 + Registered trademark, Johnson & Johnson - Merck, Fort Washington, PA 19024

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