



FLUOBORIC ACID

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME) FLUOBORIC ACID, 48-50% (various grades)	<input checked="" type="checkbox"/> C.A.S. NO. <input type="checkbox"/> GENERAL PRODUCT CODE # 16872-11-0		
CHEMICAL NAME AND/OR SYNONYM Fluoboric Acid Synonyms: Fluoroboric Acid; Hydrofluoboric Acid.			
FORMULA HBF ₄ in water	MOLECULAR WEIGHT 86.81 (solute, only)		
ADDRESS (No., STREET, CITY, STATE AND ZIP CODE) GENERAL CHEMICAL CORPORATION CN 1829 Morristown, N.J. 07960-1829			
CONTACT Director Environmental Matters	PHONE NUMBER (201) 455-5630	LAST ISSUE DATE	CURRENT ISSUE DATE Sept. 1986

B. FIRST AID MEASURES

EMERGENCY PHONE NUMBER (201) 455-3700
<p><u>Eye:</u> Immediately flush with plenty of water for at least 15 minutes, holding eyelids open to allow thorough flushing (use water only). Seek medical evaluation of potential corneal damage.</p> <p><u>Skin:</u> Promptly wash with plenty of soap and water, then flush with water until all chemical is removed (an additional 15 minutes). Remove any contaminated clothing and wash before reuse. If burns develop or irritation persists, get prompt medical attention.</p> <p><u>Inhalation:</u> Immediately remove to fresh air and call a physician. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen, provided a qualified operator is available.</p> <p><u>Ingestion:</u> Call a physician. Do not induce vomiting. Give large quantities of water or milk. Give at least one ounce of milk of magnesia or aluminum hydroxide gel in equal amount of water. If these are not available, the whites of 2 to 3 eggs may be used. Never give anything by mouth to an unconscious person.</p>

C. HAZARDS INFORMATION

HEALTH

INHALATION Vapors will irritate nose, throat and mucous membrane with coughing and choking. In severe exposures, it is estimated to be capable of possibly causing pulmonary edema.		
INGESTION It is estimated to be capable of serious and rapid corrosion of mouth, esophagus and gastrointestinal tract. May result in difficult breathing, stomach pain, and circulatory shock. Systemic fluoride poisoning is likely with severe and potentially fatal hypocalcemia occurring.		
SKIN Vapors will irritate skin with prolonged exposure producing strong, corrosive action. Direct contact may cause typical inorganic acid burns and ulceration.		
EYES Vapors will irritate and cause eyes to lacrimate. As with skin, it is estimated to be capable of causing burns and permanent corneal damage upon direct contact.		
PERMISSIBLE CONCENTRATION AIR (SEE SECTION J) ACGIH/TLV: the same.	No OSHA/TWA established for product. OSHA/TWA (Fluorides as F): 2.5 mg (F)/cu.m.	BIOLOGICAL None established for product.
UNUSUAL CHRONIC TOXICITY See Section K.		

F. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS): <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> SOLID <input type="checkbox"/> GAS <input type="checkbox"/> _____		APPEARANCE AND ODOR Colorless liquid with a slightly pungent odor.	
BOILING POINT (decomposes) 130 °C MELTING POINT (Freezing) -75 °C	SPECIFIC GRAVITY (H ₂ O = 1) (liquid) 1.37 @ 25°C	VAPOR DENSITY (AIR = 1) 3.0 (estimated)	
SOLUBILITY IN WATER (% by Weight) Complete (with limited hydrolysis, Reference b)	pH Strongly acidic in solution.		VAPOR PRESSURE (mm Hg at 20°C) <input type="checkbox"/> (PSIG) <input type="checkbox"/> 5-10 (estimated)
EVAPORATION RATE (Butyl Acetate = 1) <input checked="" type="checkbox"/> (Ether = 1) <input type="checkbox"/> Approximately 1	% VOLATILES BY VOLUME (At 20°C) Unknown.		

G. REACTIVITY DATA

STABILITY <input type="checkbox"/> UNSTABLE <input checked="" type="checkbox"/> STABLE	CONDITIONS TO AVOID May ignite combustibles. Toxic gases may accumulate in tanks and hopper cars.
INCOMPATIBILITY (MATERIALS TO AVOID) Water-reactive materials, cyanides, strong bases, sulfides, carbonates, many metals. (These can cause exothermic reactions and/or evolution of toxic gases.) Dehydration of aqueous fluoboric acid by addition of acetic anhydride is also exothermic, requiring caution.	
HAZARDOUS DECOMPOSITION PRODUCTS At the boiling point it emits toxic mist. At some point, the residual liquid decomposes on further heating, forming boron tri-fluoride and hydrogen fluoride gases.	
HAZARDOUS POLYMERIZATION <input type="checkbox"/> MAY OCCUR <input checked="" type="checkbox"/> WILL NOT OCCUR	CONDITIONS TO AVOID None known.

H. HAZARDOUS INGREDIENTS (Mixtures Only)

MATERIAL OR COMPONENT / C.A.S. #	WT. %	HAZARD DATA (SEE SECT. J)
Not applicable.		

I. ENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY Degradability: N.A. (inorganic) Aquatic toxicity: No data found.		OCTANOL/WATER PARTITION COEFFICIENT Unknown
EPA HAZARDOUS SUBSTANCE? (CLEAN WATER ACT SECT 311) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		IF SO, REPORTABLE QUANTITY: _____ * 40 CFR 116-117
WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS) Disposal of waste Fluoboric Acid solution may be subject to federal, state and local regulations. Users should review their operations in terms of applicable federal, state and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material. Waste may have to be disposed of by an approved chemical wastes contractor.		
RCRA STATUS OF <u>UNUSED</u> MATERIAL IF DISCARDED EPA "hazardous waste" (corrosive), if discarded.	HAZARDOUS WASTE NUMBER: (IF APPLICABLE) D002	40 CFR 261

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES For "Fluorides, as F": TWA: OSHA Regulations, 29 CFR 1910 (1982), "Z List". TLV: From the ACGIH 1984-85 List, "Threshold Limit Values for Chemical Substances . . .". NIOSH Registry (RTECS), 1981-82, Accession No. ED2685000.		
REGULATORY STANDARDS D.O.T. Hazardous Materials Table, 49 CFR 172.101.	D.O.T. CLASSIFICATION: Corrosive material	49 CFR 173
D.O.T. I.D. No.: UN1775		
GENERAL (a) NIOSH Criteria Document No. 76-103, "Occupational Exposure to Inorganic Fluorides", 1975, PB-246-692, NTIS. (b) <u>Merck Index</u> , 10th ed., 1983, Monograph No. 4049. (c) Acid: General toxicity and treatment discussion in Gosselin, et al., "Toxicology of Commercial Products", 4th ed., 1976. (d) Bretherick: "Handbook of Reactive Chemical Hazards", 2nd ed., 1979, Butterworths, Boston.		

K. ADDITIONAL INFORMATION

This acid is corrosive to glass, ceramic and metals.
For manufacturing use only.
Not for food or drug use.

SECTION C – HAZARDS INFORMATION (Health)
Unusual Chronic Toxicity
While we have no chronic toxicity data on this compound, per se, NIOSH [Ref. (a) above] links this with other inorganic fluorine-containing substances. Chronic exposure to fluorides is associated with osseous fluorosis (increased radiographic density of bones, the mottling of teeth, etc.). [This condition will not develop if permissible exposure levels are not exceeded.] Kidney damage, asthma and symptoms resembling rheumatism may also occur.

PSDS FILE # - GC 3042

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