

# SHORECHEM, LLC

## MATERIAL SAFETY DATA SHEET

### Fluoboric Acid

#### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Fluoboric Acid Solution

**OTHER/GENERIC NAMES:** Fluoroboric Acid; Hydrofluoboric Acid; Hydrogen Tetrafluoroborate

**PRODUCT CODES:** 194-1069

**PRODUCT USE:** Industrial

**DISTRIBUTOR:** ShoreChem, LLC  
12 Route 17 North, Suite 309  
Paramus, NJ 07652

**TELEPHONE:** (201) 845-4666  
(Monday-Friday, 8:30 AM – 5:00 PM)

**CHEMTREC PHONE:** 1800-424-9300  
(24 Hours/Day, 7 Days/Week)

#### SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME:</u>	<u>CAS NO.</u>	<u>% WT</u>
Fluoboric acid	16872-11-0	48-50
Water	7732-18-5	Balance

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-to-Know" compliance and for other reasons.

**OSHA Hazard Communication Standard:** *This product is considered hazardous under the OSHA Hazard Communication Standard*

#### SECTION 3: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** A colorless liquid with a slightly pungent odor. Causes irritation and burns to skin, eyes and respiratory tract. Harmful if inhaled or swallowed. Corrosive.

#### POTENTIAL HEALTH HAZARDS

**EYES:** Vapors will irritate and cause eyes to tear. As with skin, it is estimated to be capable of causing burns and permanent corneal damage upon direct contact.

**SKIN:** Vapors will irritate skin with prolonged exposure producing strong, corrosive action. Direct contact may cause typical inorganic acid burns and ulceration.

**INGESTION:** It is estimated to be capable of serious and rapid corrosion of the 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.

**INHALATION:** Vapors will irritate nose, throat and mucous membranes with coughing and choking. In severe exposures, it is estimated to be capable of possibly causing pulmonary edema.

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**DELAYED EFFECTS:** Chronic exposure to fluorides is associated with osseous fluorosis (increased radiographic density of bones, mottling of teeth, etc.). Kidney damage, asthma and symptoms resembling rheumatism may occur.

Ingredients found on one of the three OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section			

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#### **SECTION 4: FIRST AID MEASURES**

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**SKIN:** 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.

**EYES:** 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.

**INHALATION:** 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.

**INGESTION:** 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.

**ADVICE TO PHYSICIAN:** Treat symptomatically.

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#### **SECTION 5: FIRE-FIGHTING MEASURES**

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##### **FLAMMABLE PROPERTIES**

<b>FLASH POINT:</b>	Not applicable
<b>FLASH POINT METHOD:</b>	Not applicable
<b>AUTOIGNITION TEMPERATURE:</b>	Not applicable
<b>UPPER FLAME LIMIT (volume % in air)</b>	Not applicable
<b>LOWER FLAME LIMIT (volume % in air)</b>	Not applicable
<b>FLAME PROPAGATION RATE (solids)</b>	Not applicable

##### **EXTINGUISHING MEDIA:**

Dry chemical, carbon dioxide, water spray or foam. If material is involved in a fire, select the agent most suitable for the type of surrounding fire.

##### **UNUSUAL FIRE AND EXPLOSION HAZARDS:**

The material attacks many metals, evolving hydrogen, a flammable and explosive gas.

##### **SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:**

Firefighters should wear NIOSH-approved self-contained breathing apparatus with full facepiece. Wear full protective clothing and avoid bodily contact with the material. Keep fire-exposed containers cool with water spray, applied from as far a distance as possible.

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#### SECTION 6: ACCIDENTAL RELEASE MEASURES

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**IN CASE OF SPILL OR OTHER RELEASE:** (See section 8 for recommended personal protective equipment.)  
Provide good ventilation and personal protection. Stop leak if without risk. Neutralize spill with lime, soda ash or crushed limestone. Take up with sand or other absorbent material and place into container, cover, label and store for later disposal. Flush area to dilute any material remaining, keeping run-off away from metals, etc., and out of sewers..

Spills and releases may have to be reported to Federal and/or local authorities. See section 15 regarding reporting requirements.

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#### SECTION 7: HANDLING AND STORAGE

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**NORMAL HANDLING:** (See section 8 for recommended personal protective equipment.)  
Do not get in eyes, on skin or clothing. Avoid breathing mist, if formed. Keep containers tightly closed. Use with adequate ventilation and observe good personal hygiene and good housekeeping practices. Wash thoroughly after handling. Handle as a strong acid.

**STORAGE RECOMMENDATIONS:**  
Store at moderate temperatures, out of the sun and in a dry, well-ventilated area away from incompatible materials. Keep containers closed and protect from physical damage.

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#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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**ENGINEERING CONTROLS:**  
If material is heated or misted, provide local exhaust (corrosion-resistant construction) or a special, fully enclosed system (e.g., hood) as an alternative. Mechanical (general) ventilation is normally adequate under ambient conditions with no mist.

#### PERSONAL PROTECTIVE EQUIPMENT

<b>SKIN PROTECTION:</b>	Wear impervious apron and gloves for routine product use. For increased protection, if repeated or prolonged contact with material is anticipated, wear impervious jacket, trousers and boots. Remove promptly and wash any items upon contamination.
<b>EYE PROTECTION:</b>	Under normal conditions, wear chemical safety goggles; add a full-face plastic shield if there is any possibility of splashing or liquid contacting the eyes. Do not wear contact lenses.
<b>RESPIRATORY PROTECTION</b>	For low levels of mist (<10 x TLV) use NIOSH-approved dust or mist respirator. For intermediate levels (>10 x but <100 x TLV), use NIOSH-approved, full face, air cleaning respirators for both lung and eye protection. For high levels, use NIOSHapproved, self-contained or supplied-air breathing systems.
<b>ADDITIONAL RECOMMENDATIONS</b>	Provide eyewash stations and quick-drench shower facilities near all work and handling areas. Provide neutralization supplies and equipment, as needed.

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**EXPOSURE GUIDELINES:**

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Fluoboric Acid	2.5 mg/m <sup>3</sup> (as F)	2.5 ppm (as F)	-----

- <sup>1</sup> = Limit established by Industry Standard.  
<sup>2</sup> = Workplace Environmental Exposure Level (AIHA).  
<sup>3</sup> = Biological Exposure Index (ACGIH).

**OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:**

None

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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<b>APPEARANCE:</b>	Colorless Liquid
<b>PHYSICAL STATE:</b>	Liquid
<b>MOLECULAR WEIGHT:</b>	86.81 (solute only)
<b>CHEMICAL FORMULA:</b>	HBF <sub>4</sub> in water.
<b>ODOR:</b>	Slightly pungent odor.
<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1):</b>	1.0-1.4 @ 20°C
<b>SOLUBILITY IN WATER (weight %):</b>	Complete (with limited hydrolysis)
<b>pH:</b>	Strongly acidic in solution.
<b>BOILING POINT:</b>	Decomposes 130C
<b>MELTING POINT:</b>	-75 °C (Freezing)
<b>VAPOR PRESSURE:</b>	5-10 (estimated)
<b>VAPOR DENSITY (air= 1.0):</b>	3.0 (estimated)
<b>EVAPORATION RATE:</b>	~1 <b>COMPARED TO:</b> Butyl Acetate
<b>% VOLATILES:</b>	Unknown
<b>FLASH POINT:</b>	Not applicable

(Flash point method and additional flammability data are found in Section 5.)

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**SECTION 10: STABILITY AND REACTIVITY**

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**NORMALLY STABLE/(CONDITIONS TO AVOID):**

Stable under normal conditions. May ignite combustibles. Toxic gases may accumulate in tanks and hopper cars.

**INCOMPATIBILITIES:**

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 trifluoride and hydrogen fluoride gases.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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**IMMEDIATE (ACUTE) EFFECTS:**

LD<sub>50</sub>(oral-rat): 100 mg/kg

**DELAYED (SUBCHRONIC AND CHRONIC EFFECTS)**

No data available

**OTHER DATA:**

None.

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**SECTION 12: ECOLOGICAL INFORMATION**

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No Data Available.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**RCRA**

Is the unused product a RCRA hazardous waste if discarded? Yes      If yes, the RCRA ID number is: D002

**OTHER DISPOSAL CONSIDERATIONS:**

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.

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**SECTION 14: TRANSPORT INFORMATION**

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**US DOT HAZARD CLASS:** 8, PG II  
**US DOT ID NUMBER:** UN 1775  
**PROPER SHIPPING NAME:** Fluoroboric Acid

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

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**SECTION 15: REGULATORY INFORMATION**

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**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

**TSCA INVENTORY STATUS:** All ingredients listed on the TSCA Inventory  
**OTHER TSCA ISSUES:** None

**SARA TITLE III/ CERCLA**

"Reportable/ Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (LB)</u>	<u>SARA EHS TPQ(LB)</u>
None listed.		

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Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (800) 424-8803 and to your Local Emergency Planning Committee.

**SECTION 311 HAZARD CLASS:** Immediate, delayed

**SARA 313 TOXIC CHEMICALS:**

The following ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements. CAS numbers and weight percents are found in Section 2.

**INGREDIENT NAME**

**COMMENT**

**STATE RIGHT-TO-KNOW**

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

**INGREDIENT NAME**

**WEIGHT%**

**COMMENT**

No ingredients listed in this section.

**ADDITIONAL REGULATORY INFORMATION:**

None listed.

**WHMIS CLASSIFICATION (CANADA):**

D1B, E

**FOREIGN CHEMICAL CONTROL INVENTORY STATUS**

Listed on Canadian DSL and EU EINECS.

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**SECTION 16: OTHER INFORMATION**

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**CURRENT ISSUE DATE:** OCTOBER 11, 2005

**PREVIOUS ISSUE DATE:** JANUARY 1, 2005

**CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:**

New Format

**OTHER INFORMATION:**

All information, statements, data, advice and/or recommendations, including, without limitation, those relating to storage, loading/unloading, piping and transportation (collectively referred to herein as "information") are believed to be accurate and reliable. However, no representation or warranty, express or implied, is made as to its completeness, accuracy, fitness or a particular purpose or any other matter, including, including, without limitation, that the practice of application of any such information is free of patent infringement or other intellectual property misappropriation. ShoreChem, LLC is not engaged in the business of providing technical, operational, engineering or safety information for a fee, and therefore, any such information provided herein has been furnished as an accommodation and without charge. All information provided herein is intended for use by persons having requisite knowledge, skill and experience in the chemical industry. ShoreChem, LLC shall not be responsible or liable for the use, application or implementation of the information, provided herein, and all such information is to be used at the risk, and in the sole judgment and discretion, of such persons, their employees, advisors, and agents.

Date Created	Created By	Replaces	Area	Product/ Process	Special
10/10/05	JD	01/01/05	MSDS	Fluoroboric	SRE