

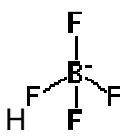
NAVIN FLUORINE INTERNATIONAL LTD		web: <a href="http://www.nfil.in">http://www.nfil.in</a> mailto: <a href="mailto:speciality@nfil.in">speciality@nfil.in</a>
		2nd Floor, Suntek Centre, 37/40, Subhash Road, Vile Parle (East), Mumbai-400057. India.

PRODUCT SPECIFICATION	
Title: FLUOBORIC ACID – 40 % (HBF <sub>4</sub> )	Document No. : NFIL/QC /SPEC/FP/040/00
	Effective Date : 05/11/2008

Material Code : SPE005211

Major Packing : UN-Certified /MS-HDPE drum 200 / 250Kg

Storage Specifications : Stored in dry condition at room temperature in well closed container.

Structural Formula : 

Molecular Formula : HBF<sub>4</sub>

Molecular Weight : 87.81

Synonyms : Hydrogen tetrafluoroborate; Hydrofluoboric acid

Sr. No.	TEST	SPECIFICATION
<b>Product Specification:</b>		
1	Appearance / Description	Clear, colourless liquid
2	Sp. Gr. at R.T.	1.30 to 1.35
3	Purity as HBF <sub>4</sub>	40.00% Min.

- Customer should discuss particular concern with business unit at [speciality@nfil.in](mailto:speciality@nfil.in) for the requirements other than specified.
- Analytical Method No. **NFIL/QC/WI/FP/040**



**NAVIN FLUORINE**  
INTERNATIONAL LIMITED

# MATERIAL SAFETY DATA SHEET (MSDS)

## *Fluoroboric acid*

### 1. CHEMICAL IDENTITY

Chemical Name	Fluoroboric acid
Synonym	Borate (1- ), tetrafluoro-, hydrogen; Borofluoric acid; Hydrogen tetrafluoroborate; Hydrofluoboric acid; Tetrafluoroboric acid; Fluoboric acid.
Formula	HBF <sub>4</sub>

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients name: Fluoroboric acid C.A.S. No. 16872-11-0(48-50%), Water: C.A.S. No.7732-18-5(47-52%), Boric acid C.A.S. No.10043-35-3(< 3%)
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### 3. PHYSICAL / CHEMICAL DATA

Boiling Point @ 760 mm Hg	130 °C	Vapour Pressure	5.1 mm Hg @ 20 °C
Melting Point	-90 °C	Solubility in water	Soluble.
Vapour Density (Air = 1) gm/lit	3.0	Appearance	clear slightly yellow
Specific Gravity/Density	1.41	Odour	Pungent
pH	Not available.	Other	.
Physical state	Liquid		

### 4. FIRE / EXPLOSION HAZARD DATA

Flammability: Non flammable	LEL%	Not available.	Flash Point °C : NA
Auto Ignition Temperature: NA	UEL%	Not available.	
Hazardous Combustion Product	Non combustible.		
Hazardous Polymerization	Has not been reported.		
Combustible liquid	NA	Oxidizer	NA
Flammable material	No	Organic Peroxide	NA
Pyrophoric material	NA	Corrosive	Yes
Explosive material	NA	Other	-



### 5. STABILITY & REACTIVITY DATA

Chemical stability/ reactivity	Stable under normal temperatures and pressures.
Incompatibility	Active metals, alkalis
Conditions to avoid	Excess heat.
Hazardous decomposition / reaction products	Boron trifluoride, hydrogen fluoride gas.

### 6. HEALTH HAZARD DATA

Route of entry	Skin, Eyes, Ingestion, Inhalation.
Effects of exposure/ Symptoms	<b>Eye:</b> Contact with liquid is corrosive to the eyes and causes severe burns. Lachrymator (substance which increases the flow of tears). <b>Skin:</b> Contact with liquid is corrosive and causes severe burns. <b>Ingestion:</b> Causes gastrointestinal tract burns. <b>Inhalation:</b> Causes chemical burns to the respiratory tract. <b>Chronic:</b> Chronic inhalation and ingestion may cause chronic fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Prolonged or repeated exposure may cause permanent bone structure abnormalities. Chronic ingestion or inhalation may cause weight loss, malaise, anemia, leukopenia (reduction in the number of white blood cells in the blood), discoloration of the teeth and osteosclerosis (the hardening or abnormal density of bone).

<b>7. TOXICOLOGICAL INFORMATION</b>			
	LD 50 / LC50	CAS# 16872-11-0: Oral, rat: LD50 = 100 mg/kg; CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg; CAS# 10043-35-3: Oral, mouse: LD50 = 3450 mg/kg; Oral, rat: LD50 = 2660 mg/kg; Oral, rat: LD50 = 2500 mg/kg;	
	Permissible Exposure Limit	CAS# 16872-11-0: 2.5 mg/m <sup>3</sup> TWA (as F) (listed under Fluorides). CAS# 7732-18-5 : none listed CAS# 10043-35-3: 2 mg/m <sup>3</sup> TWA (inhalable fraction, listed under Borate compounds, inorganic); 6 mg/m <sup>3</sup> STEL (inhalable fraction, listed under Borate compounds, inorganic)	
<b>8. ECOLOGICAL INFORMATION</b>			
No information available.			
<b>9. PREVENTIVE MEASURES/EXPOSURE CONTROL/PERSONAL PROTECTION</b>			
	Engineering Controls	Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.	
	Personal Protective Equipments	Protective gloves, protective goggles, lab coat, aprons, respirators.	
<b>10. HANDLING &amp; STORAGE</b>			
	Normal Handling	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes.	
	Storage Recommendation	Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Keep away from strong bases.	
<b>11. EMERGENCY / FIRST AID MEASURE</b>			
	Fire	Fire extinguishing medium	Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
	Exposure/first aid measures	Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
		Eyes/ Skin	Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately. Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
		Ingestion	If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
	Special procedure	Isolated area until the gas has dispersed area. Use self contained breathing apparatus and full body protection	
<b>12. ACCIDENTAL RELEASE MEASURES</b>			
	General Information	Use proper personal protective equipment as indicated in section 9	
	Spills / Leaks	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation	
<b>13. DISPOSAL CONSIDERAIONS:</b>			
	Dispose of in a manner consistent with federal, state, and local regulations.		

<b>14. TRANSPORT INFORMATION:</b>		
	<b>US DOT</b>	<b>Canada TDG</b>
<b>Proper Shipping Name</b>	FLUOROBORIC ACID	FLUOROBORIC ACID
<b>Hazard class</b>	8	8
<b>Identification / UN Number</b>	1775	1775
<b>Packing Group</b>	II	II
<b>Shipping Label</b>	CORROSIVE 	CORROSIVE 
<b>Additional Information:-</b> NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0		

<b>15. REGULATORY INFORMATION:</b>	
<p><b>European/International Regulations</b>  <b>European Labeling in Accordance with EC Directives</b>  <b>Hazard Symbols:</b> C  <b>Risk Phrases:</b>  R 34 Causes burns.  <b>Safety Phrases:</b>  S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  S 27 Take off immediately all contaminated clothing.  S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</p>	
<b>16. NAME OF FIRM: NAVIN FLUORINE INTERNATIONAL LIMITED</b>	
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Fax	+91-261-2890288
<b>DISCLAIMER</b>	
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