# SAFETY DATA SHEET

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

| | |
|---|---|
| Product name | Fluoroboric Acid, 48% |
| CAS number | 16872-11-0 |
| Synonyms | Tetrafluoroboric acid; hydrogen tetrafluoroborate. |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| Identified uses | Laboratory chemicals. |

### 1.3 Details of the supplier of the safety data sheet

| | |
|---|---|
| Company | Lab Alley, LLC<br>12501 Pauls Valley Road<br>Austin, Texas 78737<br>U.S.A. |
| Telephone | 512-668-9918 |
| Fax | 512-886-4008 |

### 1.4 Emergency telephone

| | | |
|---|---|---|
| **Emergency Phone #** | US & Canada: 1-800-535-5053 | INFOTRAC |
| | International 1-352-323-3500 | INFOTRAC |

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

| | |
|---|---|
| Skin Corrosion/Irritation | Category 1B |
| Serious Eye Damage/Eye Irrtation | Category 1 |
| Reproductive Toxicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - respiratory system. | |

### 2.2 GHS Label elements, including precautionary statements

| | |
|---|---|
| Pictogram |  |
| Signal Word | Danger |
| Hazard statements | Causes severe skin burns and eye damage. Suspected of damaging fertility or the unborn child. May cause respiratory irritation. |
| Precautionary statements | |
| Prevention | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Use only outdoors or in a well-ventilated area. |
| Response | Call a POISON CENTER or doctor/physician if you feel unwell. IF exposed or concerned: Get medical attention/advice. |
| Inhalation | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| Skin | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/phsyician. Wash contaminated clothing before reuse. |
| Eyes | IF IN EYES: Rinse cautiosly with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately |
| Ingestion | IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. |
| Store | Store locked up. Store in a well-ventilated place. Keep container tightly closed. |
| Disposal | Dispose of contents/container to an approved waste disposal plant. |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No information available.

## SECTION 3: Composition/information on ingredients

### 3.1 Components

| Chemical name | Common name and synonyms | CAS number | Concentration |
|---|---|---|---|
| Fluoroboric acid | Tetrafluoroboric acid | 16872-11-0 | 48-50% |
| Water | H2O | 7732-18-5 | 47-52% |
| Boric acid | H3BO3 | 10043-35-3 | <3% |

## SECTION 4: First aid measures

## 4.1 Description of first-aid measures

### General advice

**If inhaled** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

**In case of skin contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**In case of eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**If swallowed** Do not induce vomiting. Call a physician or Poison Control Center immediately.

## 4.2 Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

## 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

# SECTION 5: Firefighting measures

## 5.1 Extinguishing media

**Suitable extinguishing media** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

**Unsuitable extinguishing media** No information available.

## 5.2 Specific hazards arising from the substance or mixture

Corrosive material. Non-combustible. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Hazardous combustion products: Hydrogen fluoride.

## 5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 5.4 Further information

| | |
|---|---|
| **Flash Point** | No information available |
| **Autoignition Temperature** | No information available |

**Explosion limits**

| | |
|---|---|
| **Upper** | No data available |
| **Lower** | No data available |
| **Sensitivity to Mechanical Impact** | No information available |
| **Sensitivity to Static Discharge** | No information available |

**NFPA**

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 3 | 0 | 0 | N/A |

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

### 6.2 Environmental precautions

Avoid release to the environment. See Section 12 for additional ecological information.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert abosorbent material. Keep in suitable, closed container for disposal.

### 6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

**Precautions on safe handling**

Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

**Incompatibilities**

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Occupational exposure limits

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Component | Type | Value |
|---|---|---|
| Fluoroboric acid | (Vacated) TWA | 2.5 mg/m3 |

**US. ACGIH Threshold Limit Values**

| Component | Type | Value |
|---|---|---|
| Fluoroboric acid | TWA | 2.5 mg/m3 |
| Boric acid | TWA | 2 mg/m3 |
| | STEL | 6 mg/m3 |

**US. NIOSH: Pocket Guide to Chemical Hazards**
No information available.

**Biological occupational exposure limits**
No information available.

### 8.2 Exposure controls

**Appropriate engineering controls**
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal protective equipment**

**Eye/face protection**
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CRR 1910.133 or European Standard EN166.

**Skin and body protection**
Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory protection**
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Control of environmental exposure**
No information available.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical State | Liquid |
| Appearance | Light yellow |
| Odor | Pungent |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | -90 °C / -130 °F |
| Boiling Point/Range | 130 °C / 266 °F @ 760 mmHg |
| Evaporation Rate | 1 |
| Flammability (solid) | No information available |
| Flammability or explosive limit | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | 5.1 mmHg @ 20 °C |
| Vapor Density | 3.0 (Air = 1.0) |
| Density | 1.41 |
| Solubility | Soluble in water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temp | No information available |
| Decomposition Temp | No information available |
| Viscosity | No information available |
| Molecular Formula | HBF4 |
| Molecular Weight | 87.81 |
| VOC Content(%) | No information available |
| Oxidizing properties | No information available |

### 9.2 Other safety information

No information available.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None known, based on information available.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

None under normal processing.

### 10.4 Conditions to avoid

Incompatible products. Excess heat.

### 10.5 Incompatible materials

Metals, bases.

## 10.6 Hazardous decomposition products

Hydrogen fluoride.

## SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

**Product Information, Component Information**

**Acute toxicity**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Fluoroboric acid | 100 mg/kg (rat) | - | - |
| Water | - | - | - |
| Boric acid | 2660 mg/kg (rat) | > 2000 mg/kg (rabbit) | - |

**Skin corrosion/irritation**

Causes burns by all exposure routes.

**Serious eye damage/eye irritation**

Causes burns by all exposure routes.

**Respiratory or skin sensitization**

No information available.

**Germ cell mutagenicity**

No information available.

**Carcinogenicity**

| Component | CAS | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Fluoroboric acid | 16872-11-0 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Specific target organ toxicity - single exposure**

Respiratory system.

**Specific target organ toxicity - repeated exposure**

None known.

**Reproductive toxicity**

No information available.

**Chronic effects**

No information available.

## 11.2 Additional Information

No information available.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product | | Species | Test Results |
|---|---|---|---|
| Fluoroboric acid | LC50 | Carassius auratus | 20 mg/L 72h |
| | LC50 | Brachydanio rerio | 2600 mg/L 96h |
| Boric acid | LC50 | Gambusia affinis | 5600 mg/L 96h |
| | EC50 | Daphnia magna | 115 - 153 mg/L 48h |

### 12.2 Persistence and degradability
No information available.

### 12.3 Bio accumulative potential
No information available

### 12.4 Mobility in soil
Boric acid: log Pow: -0.757

### 12.5 Results of PBT and vPvB assessment
No information available

### 12.6 Endocrine disrupting properties
No information available

### 12.7 Other adverse effects
No information available.

## SECTION 13: Disposal considerations

### 13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## SECTION 14: Transport information

**DOT (US)**

| | |
|---|---|
| **UN-No** | UN1775 |
| **Proper Shipping Name** | FLUOROBORIC ACID |
| **Hazard Class** | 8 |
| **Packing Group** | II |

**IMDG**

| | |
|---|---|
| **UN-No** | UN1775 |
| **Proper Shipping Name** | FLUOROBORIC ACID |
| **Hazard Class** | 8 |
| **Packing Group** | II |

**IATA**

| | |
|---|---|
| **UN-No** | UN1775 |
| **Proper Shipping Name** | FLUOROBORIC ACID |
| **Hazard Class** | 8 |
| **Packing Group** | II |

## SECTION 15: Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous**

Listed, Acute Health Hazard.

**SARA 313 (TRI reporting)**

Not regulated

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act**

Not regulated

**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

Not listed

**US state regulations**

**US. Massachusetts RTK - Substance List**

Not listed

**US. New Jersey Worker and Community Right-to-Know Act**

Listed, Boric acid, Fluoroboric acid.

**US. Pennsylvania Worker and Community Right-to-Know Law**

Not listed

**California Proposition 65**

Not listed

## SECTION 16: Other information

Issue date: 01/07/2015
Revision 1: 05/23/2019
Revision 2: 08/27/2024
Revision 3: 07/03/2025

## SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.