Safety Data Sheet

Fluoroboric Acid, 48-50% Reagent

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Fluoroboric Acid, 48-50% Reagent

Synonyms/Generic Names: Tetrafluoroboric Acid

Product Number: 2320

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information: 920-623-2140 (Monday-Friday 8:00-4:30)
www.columbuschemical.com

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

Hazards Not Otherwise Classified (HNOC): None

Signal Word: Danger

Pictograms:

GHS Classification:

Corrosive to metals	Category 1
Skin corrosion	Category 1B
Serious eye damage	Category 1
Reproductive Toxicity	Category 1B

GHS Label Elements, including precautionary statements:

Hazard Statements:

H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage.
H360	May damage fertility. May damage the unborn child.

Precautionary Statements:

P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dusts or mists.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do not induce vomiting.

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER/doctor/physician.
P363	Wash contaminated clothing before reuse.
P234	Keep only in original container.
P390	Absorb spillage to prevent material damage.
P404+P405	Store in a closed container. Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

Potential Health Effects

Eyes	Causes serious eye damage.
Inhalation	Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May damage fertility. May damage the unborn child.
Skin	Causes severe skin burns. May be harmful if absorbed through skin.
Ingestion	Harmful if swallowed.

NFPA Ratings

Health	3
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	3
Fire	0
Reactivity	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Fluoroboric Acid	48 - 51.0	16872-11-0	240-898-3	HBF_4	87.81 g/mol
Boric Acid	1 – 2.5	10043-35-3	233-139-2	H_3BO_3	61.83 g/mol
Water	Balance	7732-18-5	231-791-2	H_2O	18.00 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 30 minutes and seek medical attention immediately.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Treat with calcium gluconate paste. Get medical attention immediately.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.
General Advice	Get medical advice / attention if you feel unwell. Show this safety data sheet to the doctor.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Use appropriate media for adjacent fire. Cool containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (hydrogen fluoride, borane/boron oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment. Keep people away from and upwind of spill/leak.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Avoid the formation of aerosol. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects.

7. HANDLING AND STORAGE

Precautions for safe handling
Do not handle until all safety precautions have been read and understood. Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Store locked up. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities
Store in cool, dry well-ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Boric acid	2 mg/m^3	TWA (inhalation)	ACGIH®TLVs®
	6 mg/m^3	STEL (inhalation)	ACGIH®TLVs®

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an

	approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat.
Other	Handle in accordance with good industrial hygiene and safety practices.

Other Recommendations
Provide eyewash stations, quick-drench showers, and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Colorless liquid
Odor	Not Available
Odor threshold	Not Available
pH	<2
Melting point/freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flash point	Not Applicable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limit	Not Available
Vapor pressure	Ca. 23 hPa (20°C)
Vapor density	Not Available
Density	1.31 – 1.41 g/cm3 (20°C)
Solubility (ies)	Water soluble
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	>130°C

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Gives off hydrogen by reaction with metals. Potential for exothermic hazard. Contact with acid liberates very toxic gas.
Conditions to Avoid	To avoid thermal decomposition, do not overheat.
Incompatible Materials	Bases, metals, glass
Hazardous Decomposition Products	Hydrogen fluoride, borane/boron oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Boric Acid

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 Oral (Rat): 2,660 mg/kg

Flouroboric acid 48-50% (Product)

ATE - Oral	>5,000 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	A4: Not Classified as a Human Carcinogen (Boric Acid)

NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Causes severe skin burns, itching, swelling, redness.
Eyes	Causes serious eye damage, Itching, redness, burning, and watering eyes.
Respiratory	Irritation, coughing, wheezing.
Ingestion	Irritation, nausea, vomiting, diarrhea.

Chronic Toxicity	May cause irreversible eye damage such as corneal damage and blindness. May cause irreversible skin damage such as necrosis, ulcers, or burns.
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	May damage fertility. May damage the unborn child. (Boruc acid)
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Fluoroboric Acid

Aquatic Vertebrate	LC50 – Fish – 2.6 mg/l - 96h
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Boric Acid

Aquatic Vertebrate	Not Available
Aquatic Invertebrate	EC50 – Daphnia (water flea) – 133 mg/l - 48h
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Partition coefficient: n-octanol/water: log Pow: 0.757 (Boric acid)
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1775, Fluoroboric acid, 8, pg II
TDG	UN1775, FLUOROBORIC ACID, 8, pg II
IMDG	UN1775, FLUOROBORIC ACID, 8, pg II
Marine Pollutant	No
IATA/ICAO	UN1775, Fluoroboric acid, 8, pg II

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA Active inventory.
DSL / NDSL	All ingredients are listed on the DSL inventory.
California Proposition 65	Not Listed
Rhode Island: Hazardous Substance List	Not Listed
Massachusetts: Toxic or Hazardous Substance List, Right to Know	Not Listed
Pennsylvania: Hazardous Substance List	Not Listed
New Jersey: Right to Know Hazardous Substance List	Listed: Fluoroboric Acid
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Physical Health Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Physical Health Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Not Listed
WHMIS Canada	Not Listed

16. OTHER INFORMATION

Revision	Date
Original	03/28/2022

Disclaimer: The information provided in this Safety Data Sheet (“SDS”) is correct to the best of our knowledge, information, and belief at the date of publication. The information in this SDS relates only to the specific Product identified under Section 1, and does not relate to its use in combination with other materials or products, or its use as to any particular process. Those handling, storing, or using the Product should satisfy themselves that they have current information regarding the particular way the Product is handled, stored or used and that the same is done in accordance with federal, state and local law. WE DO NOT MAKE ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE. WE DO NOT ASSUME RESPOSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, INJURY, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT.