



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name BXL-2E
Revision date 06-30-2011
Version # 03
Product use Borate crosslinker.
Manufacturer/Supplier FRAC TECH SERVICES LLC
2500 HWY 62 West
Chickasha, OK 73018
US
General information: 1-405-222-2300
Emergency 24 Hour Emergency: INFOTRAC: 1-800-535-5053

2. Hazards Identification

Physical state Liquid.
Appearance Clear, colorless liquid.
Emergency overview WARNING!

Causes skin and eye irritation. Mist or vapor irritating to eyes and respiratory tract.
This product is hazardous according to OSHA 29 CFR 1910.1200.
OSHA regulatory status
Potential health effects
Routes of exposure Inhalation. Eyes. Skin.
Eyes Causes eye irritation.
Skin Causes skin irritation.
Inhalation Causes respiratory tract irritation.
Ingestion No harmful effects expected in amounts likely to be ingested by accident.
Potential environmental effects The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Sodium metaborate	10555-76-7	<30

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.

Skin contact Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Inhalation Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Ingestion Because of its alkalinity, superficial effects of the mouth and esophagus should be monitored. If irritation is noted, then seek medical attention.

Notes to physician Treat as a moderately strong alkali exposure. In addition, for ingestion of large amounts (greater than 8 grams), maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment. Refer to Section 11 for details.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Fire fighting equipment/instructions	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Hazardous combustion products	Carbon oxides. Sodium oxides. Borate compounds.

6. Accidental Release Measures

Personal precautions	Wear appropriate personal protective equipment (See Section 8).
Methods for cleaning up	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste for proper disposal. Large Spills: Flush area with water. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

7. Handling and Storage

Handling	Avoid contact with eyes, skin, and clothing. Avoid breathing material. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.
Storage	Keep container tightly closed. Store away from incompatible materials (See Section 10).

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Sodium metaborate (10555-76-7)	STEL	6 mg/m3	Inhalable fraction.
	TWA	2 mg/m3	Inhalable fraction.

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.
Skin protection	Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance	Clear, colorless liquid.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not available.
Physical state	Liquid.
Form	Colorless liquid.
pH	10.55 1%v/v
Melting point	Not available.
Freezing point	30 °F (-1.1 °C)

Boiling point	197.6 °F (92 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.125 (25 °C)
Solubility (water)	Complete.
Partition coefficient (n-octanol/water)	No value. In aqueous solution sodium metaborate tetrahydrate is converted substantially into undissociated boric acid.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Bulk density	9.38 lb/gal

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Acids.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Components	Test Results
Sodium metaborate (10555-76-7)	Acute Oral LD50 Rat: 2330 mg/kg
Acute effects	Causes skin and eye irritation. Mist or vapor irritating to eyes and respiratory tract.
Sensitization	No sensitizing effects known.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
ACGIH Carcinogens	
Sodium metaborate (CAS 10555-76-7)	A4 Not classifiable as a human carcinogen.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Sodium metaborate (10555-76-7)	LC50 Fish: 74 mg/l 96 hours
Ecotoxicity	General: Boron (B) is the element in sodium metaborate tetrahydrate which is used by convention to report borate product ecological effects. It occurs naturally in seawater at an average concentration of 5 mg B/L and generally occurs in freshwater at concentrations up to 1 mg B/L. In dilute aqueous solutions the predominant boron species present is undissociated boric acid. To convert sodium metaborate tetrahydrate into the equivalent boron (B) content, multiply by 0.0784. Phytotoxicity: Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimize the amount of sodium metaborate released to the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Persistence and degradability	Boron is naturally occurring and ubiquitous in the environment. Sodium metaborate decomposes in the environment to natural borate.
Bioaccumulation / Accumulation	No data available.

Partition coefficient (n-octanol/water)	No value. In aqueous solution sodium metaborate tetrahydrate is converted substantially into undissociated boric acid.
Mobility in environmental media	Sodium metaborate is soluble in water and is leachable through normal soil.

13. Disposal Considerations

Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations. When this product as supplied is to be discarded as waste, it does not meet the definition of a RCRA waste under 40 CFR 261.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200.

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

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CFR 355, Appendix A)

No

Section 311/312 (40 CFR 370)

No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)

Not controlled

WHMIS status

Controlled

WHMIS classification

D2B - Other Toxic Effects-TOXIC

WHMIS labeling



Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey RTK - Substances: Listed substance

Sodium metaborate (CAS 10555-76-7) Listed.

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 2
Flammability: 1
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

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