MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	**LITHIUM METABORATE, ANHYDROUS, BIO-REFINED ™**
Catalog #	1915
Version #	02
Revision date	02-Aug-2011
CAS #	13453-69-5
Synonym(s)	Boric acid (HBO2), lithium salt
Manufacturer information	GFS Chemicals, Inc. P.O. Box 245 Powell, OH 43065 US www.gfschemicals.com Fax 740-881-5989 Phone 740-881-5501 Toll Free 800-858-9682 Emergency Assistance Chemtrec 800-424-9300

2. Hazards Identification

Emergency overview	Irritating to eyes. Irritating to respiratory system. Exposure to powder or dusts may be irritating to eyes, nose and throat. The toxicological properties of this material have not been fully investigated.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Eye contact.
Eyes	Causes eye irritation.
Inhalation	Irritating to respiratory system. Inhalation of dusts may cause respiratory irritation.
Potential environmental effects	Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Components	CAS #	Percent
LITHIUM METABORATE	13453-69-5	90 - 100

Composition comments

US ACGIH Threshold Limit Values: Short Term Exposure Limit (STEL): mg/m3

LITHIUM METABORATE	13453-69-5	Inhalable fraction. MGM3 - 6

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Inhalation	If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.
Ingestion	Rinse mouth.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.

Extinguishing media

Suitable extinguishing media Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Use extinguishing agent suitable for type of surrounding fire.

Protection of firefighters

Protective equipment and precautions for firefighters In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

Specific methods In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Keep upwind. Keep out of low areas. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust from the spilled material. Wear a dust mask if dust is generated above exposure limits.

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods for containment If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up Collect dust using a vacuum cleaner equipped with HEPA filter. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Following product recovery, flush area with water.

7. Handling and Storage

Handling Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid contact with eyes. Wear personal protective equipment. In case of insufficient ventilation, wear suitable respiratory equipment. Wash thoroughly after handling. Handle and open container with care.

Storage Store in a well-ventilated place. Keep container tightly closed. Guard against dust accumulation of this material. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Material	CAS #	Type	Value	Form
LITHIUM METABORATE	13453-69-5	STEL	6 mg/m3	Inhalable fraction.
		TWA	2 mg/m3	Inhalable fraction.

Engineering controls Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection Wear respirator with dust filter.

Hand protection Wear protective gloves.

Eye / face protection Avoid contact with eyes. Use tight fitting goggles if dust is generated.

General hygeine considerations Do not breathe dust. Avoid contact with eyes. Avoid contact with skin. Handle in accordance with good industrial hygiene and safety practice.

General Eye wash fountain is recommended.

9. Physical & Chemical Properties

Appearance Powder.

Color White.

Odor Odorless.

Odor threshold Not available.

Physical state	Solid.
Form	Powder.
pH	9 - 11 (0.01 M solution)
Melting point	1549.4 °F (843 °C)
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	< -0.0001 kPa at 25°C
Vapor density	Not available.
Specific gravity	1.39
Relative density	1.39 g/cm3
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Molecular weight	49.7600
Molecular formula	LiBO2

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Hazardous decomposition products	May include oxides of boron.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Local effects	Irritating to respiratory system. Irritating to eyes. Inhalation of dusts may cause respiratory irritation.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

US ACGIH Threshold Limit Values: A4 carcinogen

LITHIUM METABORATE	13453-69-5	A4 Not classifiable as a human carcinogen.

12. Ecological Information

Ecotoxicity	This product has no known eco-toxicological effects.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

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

No

Section 311 hazardous chemical

Yes

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)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
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	Yes

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.

16. Other Information

Further information

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

HMIS® ratings

Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 2
Flammability: 0
Instability: 0

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

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02-Aug-2011

This data sheet contains changes from the previous version in section(s):

This document has undergone significant changes and should be reviewed in its entirety.