

CEL Lithium

MSDS Ref. NoQS-MSD-037

Version: US/Canada

Revision No.: 10

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	Lithium Boron Alloy
CHEMICAL FAMILY:	Alkali Metal Boron Alloy
MOLECULAR FORMULA:	Li and B
ALTERNATE TRADE NAME(S):	Lithium Boron Alloy: ingot, rod, foil
GENERAL USE:	Industrial Manufacturing
MANUFACTURER:	China Energy Lithium Co., Ltd.
ADD:	Room 608, Building A2, Tian Da Science& Tech Zone, 4 th Avenue TEDA, Tianjin City, China
Emergency Telephone Numbers:	+86-22-59816832

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt.%
Lithium metal	7439-93-2	70
Boron metal	7440-42-8	30

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CLASSIFICATION	Substances and mixtures, which on contact with water, emit flammable gases; Category 1 Corrosive to skin; Category 1A
LABELING:	SYMBOLS: Flame , Corrosion SIGNAL WORD: Danger HAZARD STATEMENTS: In contact with water releases flammable gases, which may ignite spontaneously Causes severe skin burns and eye damage
PRECAUTIONARY	Prevention: Keep from any possible contact with water, because of violent reaction and possible flash fire. Protect from moisture. Handle under inert gas, or alternatively may be handled in open atmosphere at room temperature, either coated with mineral oil or where relative humidity is maintained below 50%. To maintain best quality, humidity levels of less than 2% are recommended. Wear safety glasses or goggles for general use. Full flame-resistant face shield required if

	<p>metal is in a molten state. Wear dry rubber gloves for general use. Wear full flame-resistant clothing if the metal is handled or used in a molten state. Do not breathe dusts or mists. Wash thoroughly after handling.</p> <p>Response: In case of fire DO NOT USE WATER, SAND OR CARBON DIOXIDE. Use graphite, copper powder, Lith-X (Ansul). If not available, dry sodium chloride, dry (anhydrous) calcium oxide or dry lithium chloride can be used. Wash contaminated clothing before reuse.</p> <p>First Aid See Section 4 of the MSDS.</p> <p>Storage See Section 7 of the MSDS.</p> <p>Disposal See Section 13 of the MSDS.</p>
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COMMENTS: (See Section 11, Toxicological information)

4. FIRST AID MEASURES

EYES	Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See medical doctor or ophthalmologist immediately.
SKIN	Quickly wipe off as much as possible, then immediately flush with plenty of water while removing contaminated clothing and/or shoes. Thoroughly wash with soap and water. Obtain immediate medical attention. Contact a medical doctor if necessary.
INGESTION	Quickly wipe material from the mouth and rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.
INHALATION	Remove to fresh air. If breathing difficulty or discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

NOTES TO MEDICAL DOCTOR:

This product is corrosive and reacts violently with water. Treatment should first remove as much of the material as possible

as quickly as possible, then flush with very large quantities of water. Ingestion presents a singular problem as emesis may produce esophageal damage and/or aspiration damage; dilution with water or other water-containing materials may produce a reaction that exacerbates the corrosive activity. Consideration may be given to gastric lavage with a large diameter tube for removal of material and then dilution with large amounts of water. Esophagoscopy may be of assistance in this procedure and to assess extent of damage. Treatment is otherwise symptomatic and supportive.

5. FIRE FIGHTING MEASURES

FLAMMABLE LIMITS:

Upper: Not available Lower: Not available.

GENREAL HAZARD:

Flammable solid. Water reactive.

EXTINGUISHING MEDIA:

DO NOT USE WATER, SAND OR CARBON DIOXIDE. Use graphite, copper power, Lith-X (Ansul) .If not available , dry sodium chloride, dry(anhydrous)calcium oxide or dry lithium chloride can be used.

HAZARDOUS COMBUSTION PRODUCTS:

Lithium oxide, lithium hydroxide. Boron oxide

FIRE FIGHTING PROCEDURES:

Wear full protective clothing and self-contained breathing apparatus (SCBA) approved for fire fighting .This is

necessary to protect against the hazards of heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated. Lithium fires can throw off molten lithium metal particles. Burning lithium releases corrosive lithium oxide dust and fumes. Lithium metal can reignite after fire is initially extinguished. Never leave extinguished fire unattended. After all material has apparently burned and cooled, carefully turn over remaining residue and be prepared to reextinguish should reaction occur. Carefully place residue in steel drum, using a long-handled shovel, and cover with extinguishing media.

For additional fire fighting information, see National Fire Protection Assn. Standard NFPA 485.

AUTOIGNITION TEMPERATURE: 179 °C(Lithium metal)

PROPERTIES CONTRIBUTING TO FLAMMABILITY: Water reactivity and flammability of solid.

FLASH POINT: Not applicable

SENSITIVITY TO STATIC DISCHARGE: Not applicable

SENSITIVITY TO IMPACT: Not applicable

COMMENTS: (See Section 10, Stability and Reactivity)

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES:

Remove all sources of ignition. To prevent ignition, cover with mineral oil(or kerosene),soaking thoroughly, and place in oiled steel drums which are approved for transports. Keep water and moisture away from spilled material. Dispose of waster according to local and Federal laws and regulations. Before cleanup measures begin, review the entire MSDS with particular attention to Section 3, Emergency Overview and Potential Health Effects; and Section 8, Recommended Personal Protective Equipment.

7. HANDLING AND STORAGE

HANDLING: Can be handled in open atmosphere at room temperature, either coated with mineral oil or where relative humidity is maintained below 50%. To maintain best quality, humidity levels of less than 2%are recommended. Wear safety glasses or goggles and dry rubber gloves.

STORAGE: Store in original unopened shipping container. Once opened, store in argon atmosphere or mineral oil. Keep away from heat, sparks and flame.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Use local exhaust ventilation to keep airborne concentrations below exposure limits.

EXPOSURE LIMITS

Chemical Name	TWA	STEL/Ceiling	PEL	STEL/Ceiling
	(ACGIH)	(ACGIH)	(OSHA)	(OSHA)
None				

PERSONAL PROTECTIVE EQUIPMENT

Eyes And Face:	Safety glasses or goggles for general use. Full flame-resistant face shield required if metal is in a molten state.
Respiratory:	None

Protective Clothing:	Dry rubber gloves for general use. Wear a full flame-resistant face shield if the metal is handled or used in a molten state.
Work Hygienic Practices:	Quick-drench eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR	Odorless
APPEARANCE	Silvery-grey soft metal solid
PH	(1% solution)@25°C:>12
PERCENT VOLATILE	Not applicable
VAPOR PRESSURE	Not applicable
VAPOR DENSITY	Not applicable
BOILING POINT	1317°C(Li metal with 1% Na)
MELTING POINT	180.5°C(Li metal with 1% Na)
SOLUBILITY IN WATER	Reacts violently with water
EVAPORATION RATE(Butyl Acetate=1)	Not applicable
SPECIFIC GRAVITY	0.5g/cc(Li)
MOLECULAR WEIGHT	6.94(Li) 10.811(B)
COEFF.OIL/WATER	Not applicable
ODOR THRESHOLD	Not applicable
FLAMMABLE LIMITS	Upper: Not available Lower: Not available.
FLASH POINT	Not applicable.
AUTOIGNITION TEMPERATURE	179°C(Li)
EXPLOSIVE PROPERTIES	Not explosive
OXIDIZING PROPERTIES	Not an oxidizer

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID	Temperatures above the melting point, and contact with water, moisture or humid air.
STABILITY	Stable
POLYMERIZATION	Will not occur
HAZARDOUS DECOMPOSITION	Lithium and boron are elements and do not decompose.
Products	However, lithium is highly reactive in contact with many other substances, releasing large quantities of heat and/or hazardous products. It can react violently with water, the humidity in air, and the moisture in other substances, releasing hydrogen gas, which may catch fire explosively. Corrosive fumes of lithium oxide and/or lithium hydroxide are also released.
INCOMPATIBLE MATERIALS	Acids, oxidizers, oxygen, nitrogen, or carbon dioxide

11. TOXICOLOGICAL INFORMATION

Eye Contact	No data available for the product. Corrosive.
Skin Contact	No data available for the product. Corrosive.
Skin Absorption	No data available for the product. Corrosive.
Ingestion	No data available for the product. Corrosive.
Inhalation	No data available for the product. Corrosive.
Acute Effects From Overexposure	This product is extremely reactive with body moisture and is corrosive to skin, nose, throat, stomach and eyes(may cause blindness).
Chronic Effects From Overexposure	No data available for the product.
Sensitization	No
Carcinogenicity	EH40: Not listed. IARC: Not listed. NTP: Not listed. OSHA: Not considered a carcinogen under OSHA. ACGIH: Not listed
Mutagenicity	No
Reproductive Toxicity	No

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available for the product.

Chemical Fate Information: Lithium metal reacts violently with water. The hydrolysis products consist of hydrogen gas and lithium hydroxide. The hydroxide may affect the Ph of the water.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:

Dispose of waste according to local and Federal laws and regulations.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME	Lithium, mixture (Lithium Boron Alloy)
CLASSIFICATION	4.3, Dangerous when wet
LABELS	Dangerous when wet
UN NUMBER	UN1415
PACKING GROUP	I
CUSTOM TARIFF NO	2805.19.9000
MARINE POLLUTANT	No

15. REGULATORY INFORMATION

UNITED STATES

SECTION 311 HAZARD CATEGORY(40 CFR 370)	Reactive, fire hazard, immediate (acute) health hazard.
SECTION 313 REPORTABLE INGREDIENTS (40 FR 372)	This product does not contain a toxic chemical subject to the reporting requirements of Section 313 of Emergency Planning and Community Right-To-Know Act of 1986
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES(40 CFR 355)	Not listed
CERCLA HAZARDOUS SUBSTANCE(40 CFR 302.4)	Not listed
TSCA SEC 12B EXPORT NOTIFICATION	This product is not subject to TSCA 12(b) Export Notification Requirements.
TSCA INVENTORY STATUS(40 CFR 710)	Listed

16. OTHER INFORMATION

REVISION SUMMARY: Revision #10: Regular review completed.

NFPA RATING

HEALTH: 3

FLAMMABILITY: 3

REACTIVITY: 2

SPECIAL: W

This MSDS has been prepared to meet U.S. OSHA Hazard Communication standard

Type 5a

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