



LTS Research Laboratories, Inc.
Safety Data Sheet
Molybdenum Iron Boron

1. Product and Company Identification

Trade Name: Molybdenum Iron Boron
Chemical Formula: MoFeB
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.
Street: 37 Ramland Road
City: Orangeburg
State: New York
Zip Code: 10962
Country: USA
Tel #: 855-587-2436 / 855-lts-chem

24-Hour Emergency Contact: 800-424-9300 (US & Canada)
+1-703-527-3887 (International)

2. Hazards Identification

Signal Word: Danger



Hazard Statements: H228: Flammable solid
H251: Self-heating; may catch fire
H302+H332: Harmful if swallowed or if inhaled
H335: May cause respiratory irritation
H360: May damage fertility or the unborn child
H371: May cause damage to organs
EUH018: In use may form combustible dust concentrations in air

Precautionary Statements: P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P235+P410: Keep cool. Protect from sunlight
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/lighting/equipment
P260: Do not breathe dust/fume/gas/mist/vapors/spray
P264: Wash face, hands and any exposed skin thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required
P305+P351 If in eyes: Rinse cautiously with water for several minutes
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P308+P313: IF exposed or concerned: Get medical advice/attention
P370+P378: In case of fire: Use CO₂, dry chemical or foam for extinction
P403+P235+P233: Store in a well-ventilated place. Keep cool. Keep container tightly closed

P405: Store locked up
P407: Maintain air gap between stacks/pallets
P420: Store away from other materials
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health:	2
Flammability:	3
Physical:	1

3. Composition

Chemical Family:	Alloy
Additional Names:	None

Molybdenum (Mo):	
Percentage:	0-100 wt%
CAS #:	7439-98-7
EC #:	231-107-2

Iron (Fe):	
Percentage:	0-100 wt%
CAS #:	7439-89-6
EC #:	231-096-4

Boron (B):	
Percentage:	0-100 wt%
CAS #:	7440-42-8
EC #:	231-151-2



4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None

Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing. Seek medical attention.
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Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.
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5. Firefighting Measures

Flammability:	Flammable
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Extinguishing Media:	Do not use water for metal fires – Use CO ₂ , alcohol-resistant foam, dry chemical, dry powder, dry sand.
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Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.
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6. Accidental Release Measures

If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

7. Handling and Storage

Handling Conditions:	Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	5 mg/m ³ as Mo, soluble compounds, long-term value 15 mg/m ³ as Mo, insoluble compounds, total dust, long-term value
Threshold Limit Value:	10 mg/m ³ as Mo, inhalable fraction, long-term value 3 mg/m ³ as Mo, respirable fraction, long-term value
Special Equipment:	None
Respiratory Protection:	Use a recommended dust respirator or mask. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Nitrile rubber, NBR 0.11mm thick.
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	N/A
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	N/A
Water Solubility:	N/A
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	N/A

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Strong oxidizing agents, Strong acids, Bromine trifluoride, Chlorine trifluoride, Fluorine, Lead oxide, Halogenated agents, Halogens, Oxygen, Nitriles, Aldehydes, Ammonia
Incompatible Conditions:	Moisture sensitive, Excess heat, Flames and sparks, Water
Hazardous Decomposition Products:	Molybdenum oxides, Iron oxides, Hydrogen, Boron Oxide

11. Toxicological Information

Potential Health Effects:	
Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	Harmful if swallowed
Inhalation:	Harmful if inhaled
Chronic:	N/A
Signs & Symptoms:	N/A
Aggravated Medical Conditions:	Nausea, Vomiting, Diarrhea, Convulsions
Median Lethal Dose:	5000mg/kg for rat by mouth as Mo 7500mg/kg for rat by mouth as Fe 2,000 mg/kg for rat by mouth as B
Carcinogen:	N/A

12. Ecological Information

Aquatic Toxicity:	LC50 Oncorhynchus mykiss – 644 mg/l – 96h for Mo LC50 Morone saxatilis – 13.6 mg/l – 96h for Fe
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	N/A

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

14. Transportation Data

Hazardous:	Hazardous as powder only
	
Hazard Class:	4.1 Flammable solids
Packing Group:	II
UN Number:	UN3089
Proper Shipping Name:	Metal powders, flammable, n.o.s. (Molybdenum Iron Boron)

15. Regulatory Information

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	No

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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