

LYMAN PRODUCTS

SAFETY DATA SHEET

Safety Data Sheet (in compliance with Regulation (EC) 1907/2006, Regulation (EC) 1272/2008 and Regulation (EC) 453/2010),

Date Issued: 7/14/15
Date Revised: 5/20/19
Revision Number: Rev 1

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

1.1 Product Identifier

Trade Name Super Moly "Superfine" Grade Moly Powder
Product Number 7631412

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Use: Bullet Shine

Restrictions on Use: None known

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer: Lyman Products
475 Smith Street
Middletown, CT 06457 USA
Information Phone Number: (860) 632-2020
E-mail

1.4 Emergency Telephone Number Emergency Spill Information

For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call ChemTel Inc. Day or Night
Within the USA and Canada: 1-800-255-3924 or
Outside the USA at +1-813-248-0585 (collect calls accepted)
Shipments within: Australia – 1-300-954-538, Brazil 0-800-591-6042, China 400-120-0751, India 000-800-099-0731
Reference Contract Number: MIS3953100

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

US Hazard Classification (29CFR 1910.1200-2012): This product is not classified as hazardous in accordance with the OSHA Hazard Communication Standard.

GHS/CLP (1272/2008) Classification:

This product does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

2.2 Label Elements

None Required

2.3 Other Hazards: None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Chemical Name	CAS#	EINECS#	GHS/CLP Classification	% w/w
Molybdenum disulfide (MoS ₂)	1317-33-5	215-263-9	Not Hazardous	>99%

The exact percentage is a trade secret

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

Eye: If contact with dust occurs, rinse thoroughly with water. Get medical attention if irritation occurs and persists.

Skin: No first aid should be needed. If irritation occurs, wash contact area with soap and water. Get medical attention if irritation or symptoms of exposure develop.

Inhalation: No first aid should be needed. If irritation from dust occurs and persists, get medical attention.

Ingestion: No harmful effects are expected. If symptoms occur, get medical attention.

4.2 Most Important symptoms and effects, both acute and delayed: If dust is generated, it may cause slight mechanical eye and skin irritation, and respiratory irritation. Symptoms would include itching eyes and skin, cough, and nasal congestion.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate first aid should not be needed.

SECTION 5: FIRE AND EXPLOSION DATA

5.1 Extinguishing Media: Standard extinguishing media such as water, sand and foam. Use fire-fighting measures that suit the location and surroundings.

5.2 Special Hazards Arising from the Substance or Mixture

Unusual Fire and Explosion Hazards: This product will react violently with hydrogen peroxide. Avoid reaction with hydrogen peroxide, potassium nitrate and stray oxidizers.

Combustion Products: Decomposes on heating and produces toxic fumes of sulfur oxides (SO₂) and molybdenum trioxide.

5.3 Advice for Fire-Fighters:

Special Fire Fighting Procedures: Wear an approved, positive pressure, self-contained breathing apparatus and full protective clothing for all fires involving chemicals.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Avoid dust cloud formation and inhaled dust. Seek to ensure ventilation that maintains airborne concentrations below occupational exposure limits. Keep unprotected persons away. Although the substance has no or very low acute toxicity hazard, it is advised to avoid contact with skin, eyes, and clothing; wear suitable protective equipment when needed.

6.2 Environmental Precautions:

Avoid release to the environment. Report spills and releases as required to appropriate authorities.

6.3 Methods and Material for Containment and Cleaning Up:

Avoid formation and inhalation of dust. Use an appropriate industrial vacuum cleaner, equipped with ULPA or HEPA filters. Collect spilled material in suitable containers for recovery or disposal. In the case of disposal, spilled material or contaminated material should be disposed of as waste as described in Section 13.

6.4 Reference to Other Sections: Refer to Section 8 for personal protective equipment and Section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling: Avoid creating and breathing dusts.

7.2 Conditions for Safe Storage, Including any Incompatibilities: Store in a dry area away from incompatible materials.

7.3 Specific end use(s): None specified

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters: Refer to country-specific legislation for specific requirements where not listed below.

Chemical Name	Exposure Limits
Molybdenum disulfide (as Molybdenum compounds, as Mo)	10 mg/m ³ TWA (inhalable), 3 mg/m ³ TWA ACGIH TLV (respirable) 15 mg/m ³ TWA OSHA PEL (total dust) 10 mg/m ³ TWA (inhalable aerosol), 20 mg/m ³ STEL UK WEL (inhalable aerosol) South Korea: 10 mg/m ³ TWA Australia: 10 mg/m ³ TWA (insoluble)

8.2 Exposure Controls:

Appropriate Engineering Controls: General exhaust ventilation should be adequate to maintain exposures below occupational exposure limits.

Respiratory Protection: None required for normal use. If needed, an approved dust respirator may be used. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

Skin Protection: Impervious gloves are recommended if needed to avoid prolonged contact.

Eye Protection: None should be needed under normal use conditions. Safety glasses should be used if eye contact is likely.

Other Protective Equipment: None should be needed under normal use conditions.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
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9.1 Information on basic Physical and Chemical Properties

Appearance: Gray to Black powder	Vapor Density: Not applicable
Odor: Odorless.	Specific Gravity: 4.80 to 5 g/cm ³ @ 14°C (47.2° F) (natural Molybdenite) or 4.96 +/- 0.03 (re-purified MoS ₂)
Odor Threshold: No data available	Solubility: Immiscible, 0 mg/L @ 20°C (68°F)
pH: Not applicable	Octanol/Water Partition Coefficient: No data available
Melting Point/Freezing Point: 1185°C (2165°F)	Autoignition Temperature: No data available
Boiling Point: Not applicable	Decomposition Temperature: >315°C(>599°F) – Begins oxidization to MoO ₃
Flash Point: Not applicable	Viscosity: Not applicable
Evaporation Rate: Not applicable	Explosive Properties: Minimum explosive concentration (dust cloud) 125 – 150 g/m ³ (Kst value = 1) for processed Superfine.
Flammable Limits: LEL: Not applicable UEL: Not applicable	Oxidizing Properties: Not an oxidizer
Vapor Pressure: 0.0 kPa @ 20°C (68°F)	Flammability (solid, gas): Not flammable

9.2 Other Information: None available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: Not reactive under regular storage and handling conditions.

10.2 Chemical Stability: Stable under regular storage and handling conditions.

10.3 Possibility of Hazardous Reactions: According to "Bretherick's Handbook" [9] molybdates react violently or explosively when reduced to molybdenum by heating with zirconium. Other hazardous reactions have not been identified. Otherwise, will not react or polymerize.

10.4 Conditions to Avoid: Avoid temperatures near decomposition temperature.

10.5 Incompatible Materials: Hydrogen peroxide, potassium nitrate and most oxidizers. Violent reaction with hydrogen peroxide. Hazardous polymerization will not occur.

10.6 Hazardous Decomposition Products: Upon thermal decomposition may product hazardous Molybdenum trioxide fumes and sulfur dioxide gas when burned.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Potential Health Effects:

Eye Contact: If dust is generated, it may cause slight mechanical eye irritation. Corneal injury is unlikely.

Skin Contact: If dust is generated, may cause slight mechanical irritation with prolonged or repeated exposure.

Inhalation: If dust is generated, may cause slight nose and throat irritation.

Ingestion: Not expected to be harmful. Ingestion of large amounts may cause gastrointestinal distress.

Acute Toxicity Values:

Oral rat LD50 > 5000 mg/kg, inhalation rat LC50 > 2.82 mg/L, dermal rat LD50 > 16000 mg/kg.

Skin corrosion/irritation: Molybdenum disulfide is not classified as a skin irritant.

Eye damage/irritation: Molybdenum disulfide is not classified as an eye irritant.

Respiratory Irritation: Molybdenum disulfide is not classified as a respiratory irritant.

Respiratory Sensitization: Molybdenum disulfide is not classified as a respiratory sensitizer.

Skin Sensitization: Molybdenum disulfide is not classified as a skin sensitizer.

Germ Cell Mutagenicity: Molybdenum disulfide is not classified as a germ cell mutagen.

Carcinogenicity: None of the components of this product present at 0.1% or greater are listed as carcinogens by OSHA, IARC, NTP, ACGIH and the EU CLP.

Reproductive Toxicity: No data available for mixture. Components are not reproductive toxins.

Aspiration Hazard: No data available for mixture. Components do not present an aspiration hazard.

Specific Target Organ Toxicity:

Single Exposure: No data available

Repeat Exposure: No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Pimephales promelas 96h-LC50 609 – 681.4 mg Mo/L (1,078-1,207 mg (NH₄)₂Mo₂O₇/L)

Daphnia magna 48h-LC50 1680.4 – 1776.6 mg Mo/L

Ceriodaphnia dubia 48h-LC50 1005.5 – 1024.6 mg Mo/L

This product is not expected to be hazardous to the environment.

12.2 Persistence and Degradability: Product when released into the environment - will rapidly dissolve and will be present as the molybdate species under normal environmental conditions.

12.3 Bioaccumulative Potential: Available BCF/BAF data for the aquatic environment show a distinct inverse relationship with the exposure concentration. This finding demonstrates that molybdenum is homeostatically controlled by these organisms, and this is so up to the milligram range of exposure. Available information on transfer of molybdenum through the food chain indicates that molybdenum does not bio-magnify in aquatic food chains. Although not homeostatically controlled in terrestrial plants and invertebrates, molybdenum is not largely concentrated from soil into plants or soil to invertebrates. There is no significant concentration increase from diet to mammals or birds. It is concluded that bio-magnification is not significant in the terrestrial food-chain.

12.4 Mobility in Soil: Molybdate is soluble in water and with its relatively low Kd value; the molybdate ions are leachable through normal soil and are mobile in sediment. Typical log Kd values of 3.25 and 2.94 have been determined for sediment and soil, respectively.

12.5 Results of PBT and vPvB Assessment: Molybdenum disulfide is not PBT or vPvB

12.6 Other Adverse Effects: None known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Dispose in accordance with all local, state and national regulations.

SECTION 14: TRANSPORTATION INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	None	Not regulated	N/A	N/A	None
Canadian TDG	None	Not regulated	N/A	N/A	None
EU ADR/RID	None	Not regulated	N/A	N/A	None
IMDG	None	Not regulated	N/A	N/A	None
IATA/ICAO	None	Not regulated	N/A	N/A	None

14.6 Special Precautions for User: Not applicable

14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environment Regulations/Legislation Specific for the Substance or Mixture:

U.S. FEDERAL REGULATIONS:

CERCLA 103 Reportable Quantity: This product is not subject to reporting under CERCLA. Some states have more stringent reporting requirements. Report all spills in accordance with local, state, and federal regulations.

SARA TITLE III:

Hazard Category for Section 311/312: Not Hazardous

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on TSCA.

STATE REGULATIONS:

California Proposition 65: This product contains the following substances known to the State of California to cause cancer, birth defects or other reproductive harm: None

INTERNATIONAL REGULATIONS:

Canadian Environmental Protection Act: All of the components are listed on the Canadian Domestic Substances List.

European Union: All of the components are listed on the European Inventory of New and Existing Chemical Substances (EINECS) inventory.

Australia: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances (AICS).

China: All of the ingredients of this product are listed on the Inventory of Existing Chemical Substance in China (IECSC).

Korea: All of the components of this product are listed on the Korean Existing Chemical List (KECL).

Japan: All of the components of this product are listed on the Japanese Existing and New Chemical Substances List (ENCS).

New Zealand: One or more of the components of this product are not listed on the New Zealand Inventory of Chemicals (NZIoC).

Philippines: All of the components of this product are listed on the Philippine Inventory of Chemicals and Chemical Substances (PICCS).

German WGK: nwg

SECTION 16: OTHER INFORMATION

HMIS Ratings: Health - 0

Flammability - 0

Physical Hazard - 0

NFPA Ratings: Health - 0

Flammability - 0

Stability - 0

Supersedes: None

Date Updated: 7/14/15

Revision Summary: New document.

GHS Classification for Reference (See Sections 2 and 3):

None

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This above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. Lyman Products shall not be held liable for any damage resulting from handling or from contact with the above product.