

Material Safety Data Sheet
Revised 10/28/11

Molybdenum Products
MSDS – 0458

1. Identification of the Substance and of the Company	1.1 Product Identified: Molybdenum Products. 1.2 Uses: Lighting, furnace, electronics, medical applications. 1.3 Supplier : Elmet Technologies, Inc., 1560 Lisbon Street, Lewiston Maine 04240 1.4 Emergency Phone Number: 1-800-333-6100
2. Hazards Identification	2.1 Classification: Not a hazardous material per Regulation (EC) NO. 1272/2008 EC or EC Directive 67/548/EEC. 2.2 Label elements: Compact metal/alloy with no risk to human health or the environment. 2.3 Other hazards: Dusts from powder may present a fire hazard.
3. Composition/Information on Ingredients	3.1 Substances: Molybdenum (CAS# 7439-98-7), additions of Lanthanum Oxide (CAS# 1312-81-8), Silicon (CAS# 7440-21-3), Potassium (CAS# 7440-09-7) at < 1% mass fraction. May be in powder, wire, filament of formed/machined metal parts. 3.2 Mixtures: None
4. First Aid Measures	4.1 First aid measures: Wash dust off thoroughly with soap and water. 4.2 Symptoms, effects: Inhalation, eyes – dust may cause irritation. 4.3 Medical, treatment: Consult physician after prolonged exposure to dust. There are no components listed as carcinogen or potential carcinogen per NTP, OSHA or IARC.
5. Firefighting Measures	5.1 Extinguishing media: Dry chemical extinguishing media recommended. 5.2 Special hazards: Auto ignition is 360 degrees C for 0 – 74 micron dust. Flammable, explosive limits not tested. Powder is a weak fire and explosion hazard. 5.3 Firefighting advice: Breathing protection in presence of dust.
6. Accidental Release Measures	6.1 Precautions, PPE, emergency procedures: Eliminate sources of ignition. Do not create dust cloud during clean up operations. 6.2 Environmental precautions: Avoid contamination of soils and water. 6.3 Containment and clean up: Vacuum or wet-sweep powder. Protect against inhalation of dust. 6.4 Reference to other sections: None
7. Handling and Storage	7.1 Safe handling: Avoid dust formation. Use suction cleaning methods. Avoid sources of ignition including static sparks. 7.2 Safe storage, incompatibilities: No special measures required. Store in cool, dry, ventilated area. 7.3 Specific end uses: None – refer to section 1.2
8. Exposure Controls/ Personal Protection	8.1 Control parameters: OSHA PEL: 5 mg/m ³ ; ACGIH TLV: 10 mg/m ³ . 8.2 Exposure controls: Wear goggles and repertory protection when dealing with dust. Wear a NIOSH approved respirator if airborne concentrations exceed limits cited above.
9. Physical and Chemical Properties	9.1 Physical, chemical properties: Appearance: silver-grey to black. Boiling point: 4325 degrees C. Specific gravity: 19.3 g/cm ³ @ 20 degrees C. 9.2 Other information: Will oxidize in water and become slightly soluble. Sublimes in air at high temperature.

10. Stability and Reactivity	<p>10.1 Reactivity: Not reactive. 10.2 Chemical stability: Stable. 10.3 Possible hazardous reactions: No known hazardous reactions. 10.4 Conditions to avoid: Avoid high temperature in air. 10.5 Incompatible materials: Avoid strong oxidizers. 10.6 Hazardous decomposition products: Heat produces trioxide or hex carbonyl hydroxide.</p>
11. Toxicological Information	<p>11.1 Toxicological effects: No known toxic effects.</p>
12. Ecological Information	<p>12.1 Toxicity: No known toxic effects. 12.2 Persistence, degradability: Stable. 12.3 Bioaccumulative potential: No evidence of bioaccumulative potential. 12.4 Soil mobility: Will oxidize in water and become slightly soluble. 12.5 Results of PBT, vPvB assessment: Does not meet criteria for these substances. 12.6 Other adverse effects: None</p>
13. Disposal Considerations	<p>13.1 Waste treatment: Dispose residues as metal waste. Consider reclamation or recycling. Follow federal, state, local, national and regional regulations.</p>
14. Transport Information	<p>14.1 UN number: Not dangerous to transport. 14.2 UN proper shipping name: Not dangerous to transport. 14.3 Transport hazard class: Not dangerous to transport. 14.4 Packing group: Not dangerous to transport. 14.5 Environmental hazards: Not dangerous to transport. 14.6 Special user precautions: Not dangerous to transport. 14.7 Transport per annex II of MARPOL73/78, IBC code: Not dangerous to transport.</p>
15. Regulatory Information	<p>15.1 Safety, health, environmental regulations/legislation: No labeling required. Obey pertinent regulations. 15.2 Chemical safety assessment: Not considered a hazardous substance.</p>
16. Other Information	<p>Although reasonable care has been taken in the preparation of information herein, Elmet Technologies extends no warranties, express or implied, makes no representations and assumes no responsibility to the accuracy or suitability of information for application to the purchaser's intended, proposed or for consequences of its use. Judgments as to the suitability of information for purchaser's purposes are purchaser's responsibility.</p>