KJLC Product Code: **EVMMO35QXQB**

Kurt J. Lesker Company

Molybdenum metal, powder and pieces

Manufacturer MSDS Number: Mo

SECTION 1 : Chemical Product and Company Identification

MSDS Name: Molybdenum metal, powder and pieces
Manufacturer Name:Kurt J. Lesker Company
Address:

1925 Worthington Ave
Clairton, PA 15205

For emergencies in the US, call CHEMTREC: 800−424−9300
Other Phone: US National Poison Hotline: (800)222−1222
Manufacturer MSDS Creation Date:

06/22/2006

Manufacturer MSDS Revision Date:

06/22/2006

Synonyms:

Molybdenum metal, greater than 10 microns; molybdate

Chemical Family: Metal
Chemical Formula: Mo
Molecular Weight: 95.94
DOT HAZARD LABEL

No data.

Product Codes:

Mo

TOP

SECTION 2 : Hazardous Ingredients/Identity Information

Chemical Name	***CAS#***	***% Weight***	
Molybdenum	7439−98−7	0.0 −100.0 %	

RTECS:

QA4680000

Chemical Name	***CAS#***	***% Weight***	
See SECTION IX−ADDITIONAL COMMENTS FOR COSHH Regulations	NA	0.0 −100.0 %	

RTECS:

NA

TOP

SECTION 3 : Physical And Chemical Characteristics

Physical State/Appearance:

Grey−black powder or silver−white metal pieces, no odor.

Physical State:

[ ] Gas , [ ] Liquid , [X] Solid

pH:

No data.

Vapor Pressure:

1 mm at 3102.0 C (5615.6 F) (VS. AIR OR MM HG)

Vapor Density:

.6964 (VS. AIR = 1)

Boiling Point:

4825.00 deg C (8717.0 deg F) to 5560.00 deg C (10040.0 deg F)

Melting Point:

2610.00 deg C (4730.0 deg F) to 2626.00 deg C (4758.8 deg F)

Solubility In Water:

insoluble

Specific Gravity:

10.2 gm/cc (WATER = 1)

Density:

No data.

Evaporation Point:

No data. (VS BUTYL ACETATE=1)

Percent Volatile:

N.A.

FlashPoint:

N.A.

Upper Flammable Explosive Limit:

NA

Lower Flammable Explosive Limit:

NA

TOP

SECTION 4 : Fire And Explosion Hazards

Flash Point:

N.A.

Flash Point Method:

No data.

Upper Flammable or Explosive Limit: NA

Lower Flammable or Explosive Limit: NA

Extinguishing Media:

Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.

Fire Fighting Instructions:

Firefighters must wear full face, self−contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire Hazards:

Flammable in the form of dust or powder (below 9 microns), which may ignite during intensive mechanical treatment. When heated to decomposition, molybdenum metal may emit toxic fumes of molybdenum. May have a violent reaction with oxidizing agents. Molybdenum oxidizes rapidly above 1000F in air at sea level. Dust−air mixtures may be explosive. Combines with oxygen on heating to give MoO3.

TOP

SECTION 5 : Health Hazards

Applies to All Ingredients:

Route of Exposure:

Inhalation? Yes , Skin? Yes , Eyes? Yes , Ingestion? Yes , Other: N

Potential Health Effects:

Eye Contact:

Prolonged or repeated contact may cause irritation.

Skin Contact:

Prolonged or repeated contact may cause irritation.

Inhalation:

May cause irritation to the upper respiratory system.

Ingestion:

May cause acute molybdenum poisoning.

Chronic Eye Contact:a

No chronic health effects recorded.

Chronic Skin Contact:

No chronic health effects recorded.

Chronic Inhalation:

May cause pneumonoconiosis, anemia, hyperthyroidism, abnormal liver function test, increased susceptibility to gout.

Chronic Ingestion:

May cause chronic molybdenum poisoning.

Carcinogenicity:

NTP? No , IARC Monographs? No , OSHA Regulated? No

Target Organs:

May affect the lungs, bones, spleen, respiratory system, nervous system, liver, blood and heart.

Signs/Symptoms:

INHALATION: May cause a red, dry throat and coughing. INGESTION: Acute molybdenum poisoning may cause severe gastrointestinal irritation, diarrhea, coma, and death from cardiac failure. Chronic molybdenum poisoning as seen in animals may cause: loss of weight, anorexia, anemia, deficient lactation, male sterility, osteoporosis and bone−joint abnormalities. SKIN: May cause redness, burning, and itching. EYE: May cause redness, burning, itching and watering.

Other Potential Health Effects:

CARCINOGENICITY/OTHER INFORMATION: Mutation data reported. An experimental teratogen. Experimental reproductive effects. MOLYBDENUM METAL OTHER TOXICITY DATA: cyt−rat−ihl 19500 ug/m3 orl−mus TDLO: 448 mg/kg (multi):TER ipr−rat LDLO: 114 mg/kg itr−rbt LDLO: 70 mg/kg orl−rat TDLO: 6050 ug/kg (female 35W pre):REP

Aggravation of Pre−Existing Conditions:

Pre−existing lung disorders.

See "Section II" LD 50/LC 50: See "Carcinogenicity/Other Information"

TOP

SECTION 6 : Emergency And First Aid Procedures

Physical Health Hazard:

HEALTH HAZARDS (ACUTE AND CHRONIC): Molybdenum compounds are poison by subcutaneous and intraperitoneal routes. Molybdenum and its compounds are highly toxic based upon animal experiments. Symptoms of acute poisoning include severe gastronintestinal irritation with diarrhea, coma and deaths from heart failure. Experimental animals exposed to high levels accumulated Mo in the lungs spleen, and heart, and showed a decrease of DNA and RNA in the liver, kidneys and spleen. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Eye Contact:

Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Skin Contact:

Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

Inhalation:

Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention if symptoms persist.

Ingestion:

Give 1−2 glasses of milk or water and induce vomiting; seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

TOP

SECTION 7 : Reactivity Data

Chemical Stability:

Unstable [ ] Stable [X]

Conditions to Avoid:

CONDITIONS TO AVOID − INSTABILITY: None; CONDITIONS TO AVOID − HAZARDOUS POLYMERIZATION: None

Incompatibilities with Other Materials:

Oxidizing agents, bromine trifluoride, chlorine trifluoride, fluorine, lead dioxide

Hazardous Polymerization:

Will occur [ ] Will not occur [X]

Hazardous Decomposition Products:

Molybdenum, molybdenum trioxide and other oxides of molybdenum.

TOP

SECTION 8 : Precautions For Safe Handling

Spill Cleanup Measures:

Wear appropriate respiratory and protective equipment specified in section VIII−control measures. 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 proper disposal. Take care not to raise dust.

Other Precautions:

None

HAZARD LABEL INFORMATION:

Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

Handling:

None

Storage:

None

Hygiene Practices:

WORK/HYGIENIC/MAINTENANCE PRACTICES: Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. 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.

Waste Disposal:

Dispose of in accordance with local, state and federal regulations.

TOP

SECTION 9 : Control Measures

Ventilation System:

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Good general ventilation is recommended.

Hand Protection Description:

Rubber gloves

Eye/Face Protection:

Safety glasses

Protective Clothing/Body Protection:

Protective gear suitable to prevent contamination

Respiratory Protection:

NIOSH approved respirator

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

Ingredient Guidelines

Ingredient: Molybdenum

Guideline Information: ACGIH TLV: 10 mg/m3; OSHA PEL: No data.; OTHER LIMITS: 5 mg/m3 resp

Ingredient: See SECTION IX−ADDITIONAL COMMENTS FOR COSHH Regulations

Guideline Information: ACGIH TLV: No data.; OSHA PEL: No data.; OTHER LIMITS: No data.

TOP

SECTION 10 : Other Information

Molybdenum:

Section 302:

No

Section 304:

No

Section 313 Toxic Release Form:

No

HMIS:

Health Hazard: 1

Fire Hazard: 0

Reactivity: 1

Personal Protection: E

Disclaimer:

Kurt J. Lesker Company (?KJLC?) believes the information contained in this Material Safety Data Sheet is accurate as of the ?Date of Last Revision? specified. The information relates only to typical properties of the product. Do not use the information for product performance or specification purposes. The information is for use by technically skilled persons at their own risk. KJLC MAKES NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND, INCLUDING WITHOUT LIMITATION WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR THE INFORMATION. The information may not be valid for product use in combination with any other product or material or in any process. KJLC expressly disclaims any liability arising from any use of the product or any reliance on the information. Do not treat the information (a) as assurance that use of the product will not infringe patent or other rights or (b) as a license or grant of patent or other property rights. ?KJLC? means KJLC and each of its subsidiaries.

Comment:

SUPERCEDES REVISION 06/25/2002 Control of Substances Hazardous to Health Regulations EH40 Occupational Exposure Limits MOLYBDENUM INSOLUBLE COMPOUNDS Maximum Exposure Limit: NE Occupational Exposure Standard: 10 mg/m3 20 mg/m3 Short−term Exposure Limit . OTHER HAZARD RATINGS: Health: 1 Flammability: 0 Reactivity: 1 Special Hazard: E Minimal:0 Slight: 1 Moderate:2 Serious: 3 Extreme: 4

Abbreviations used

NA=Not Applicable NE: Not Established