



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Molybdenum (III) chloride

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1. Product and Company Identification

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Trade Name: Molybdenum (III) chloride  
Chemical Formula: MoCl<sub>3</sub>  
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)

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2. Hazards Identification

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Signal Word: Danger



Hazard Statements: H314: Causes severe skin burns and eye damage.  
H335: May cause respiratory irritation.

Precautionary Statements: P261: Avoid breathing dust/ fume/ gas/ mist/ vapors / spray.  
P264: Wash skin thoroughly after handling.  
P271: Use only outdoors or in a well-ventilated area.  
P280: Wear protective gloves/ eye protection/ face protection.  
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.  
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332 + P313: If skin irritation occurs: Get medical advice/ attention.  
P337 + P313: If eye irritation persists: Get medical advice/ attention.  
P363: Wash contaminated clothing before reuse  
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.  
P405: Store locked up.  
P501: Dispose of contents/ container to an approved waste disposal plant.

HMIS Health Ratings (0-4):  
Health: 3  
Flammability: 0  
Physical: 0

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### 3. Composition

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Chemical Family: Inorganic  
Additional Names: Molybdenum trichloride

Molybdenum (III) chloride (MoCl<sub>3</sub>):

Percentage: 0-100 wt%  
CAS #: 13478-18-7  
EC #: 236-775-9

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### 4. First Aid Procedures

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General Treatment: Seek medical attention if symptoms persist.  
Special Treatment: None  
Important Symptoms: Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.  
Ingestion: Give one to two glasses of water. Never induce vomiting or give anything by mouth to an unconscious person.  
Skin: Wash affected area with mild soap and water. Remove any contaminated clothing.  
Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

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### 5. Firefighting Measures

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Flammability: Non-flammable, except as powder

Extinguishing Media: No special restrictions – use suitable extinguishing agents such as water spray, alcohol-resistant foam, dry chemical or carbon dioxide. for surrounding material and type of fire. Do not use water for metal fires – use CO<sub>2</sub>, sand, extinguishing powder.

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

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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.

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## 7. Handling and Storage

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Handling Conditions:	Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed, then seek immediate medical assistance.
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.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	5 mg/m <sup>3</sup> as MoCl <sub>3</sub> , long-term value
Threshold Limit Value:	0.5 mg/m <sup>3</sup> as MoCl <sub>3</sub> , long-term value
Special Equipment:	None
Respiratory Protection:	Dust Respirator
Protective Gloves:	Rubber gloves
Eye Protection:	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	Dark red
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Acidic
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	410 °C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	3.58 g/cc
Molecular weight:	202.30 g/mol

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Strong oxidizing agents, Strong bases
Incompatible Conditions:	Moisture and air
Hazardous Decomposition Products:	Hydrogen chloride, Molybdenum oxides

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	Causes serious irritation
Skin:	Causes serious irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	N/A

### Signs & Symptoms:

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

### Aggravated Medical Conditions:

N/A

### Median Lethal Dose:

N/A

### Carcinogen:

N/A

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## 12. Ecological Information

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Aquatic Toxicity:	N/A
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	May Persist
Notes:	N/A

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## 13. Disposal Considerations

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

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## 14. Transportation Data

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### Hazardous:

Hazardous for transportation.



Hazard Class:  
Packing Group:  
UN Number:  
Proper Shipping Name:

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III  
UN3260  
Corrosive solid, acidic, inorganic, n.o.s. (Molybdenum (III) chloride)

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## 15. Regulatory Information

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Sec 302 Extremely Hazardous:	N/A
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	N/A

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## 16. Other Information

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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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