

Section 1: Product and Company Identification

PRODUCT NAME: Molybdenum Products
CHEMICAL FAMILY: Metal
CHEMICAL NAME: Mo
MANUFACTURER: Williams Advanced Materials
PO Box 1950
Brewster, NY 10509-8950

EMERGENCY TELEPHONE: 845-279-0900 CHEMTREC 800-424-9300 (24 hour)

Section 2: Composition/Ingredients

MATERIAL	CAS No.	% wt.	* TLV, ACGIH	* PEL, OSHA
Molybdenum	7439-98-7	100	10	10

*All exposure limits are in milligram per cubic meter of air (mg/m³)

Section 3: Hazard Identification**EMERGENCY OVERVIEW:**

The products as sold in solid form are generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulates could be generated.

PRIMARY ROUTES OF ENTRY: Inhalation; Skin contact.

TARGET ORGANS: Respiratory tract; Skin

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

Listed below are certain potential health hazards, which apply to the hazardous ingredients, found in the subject alloy.

MOLYBDENUM	Inhalation -	Dust or oxide fumes may cause respiratory, eye, nose and mucous membrane irritation.
	Eyes -	May cause eye irritation, Could cause dermatitis
	Acute -	Molybdenum poisoning may cause severe gastrointestinal irritation, diarrhea, coma and cardiac failure
	Chronic -	Dust may cause " Hard Metal Lung Disease". Accumulation of Mo in organs may cause decrease of DNA and RNA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals who may have had allergic reactions to metal or sensitivity, may encounter skin rash or dermatitis, if skin contact with this product occurs. Persons with impaired pulmonary functions, may incur further impairment if dust or fumes are inhaled

CARCINOGENIC REFERENCES:

Molybdenum is listed in the Annual Report on Carcinogens prepared by the National Toxicology Program (NTP), as well as the International Agency for Research on Cancer (IARC)

Section 4: First Aid Measures

- FIRST AID FOR EYES:** Dust or powder should be flushed from the eyes with running water for 15 minutes. If irritation persists obtain medical assistance.
- FIRST AID FOR SKIN:** Skin cuts and abrasions can be treated by standard first aid. Skin contamination with dust or powder can be removed with soap and water. If irritation persists obtain medical assistance.
- FIRST AID FOR INGESTION:** Obtain medical assistance at once.
- FIRST AID FOR INHALATION:** Breathing difficulty, caused by inhalation of dust or fume requires removal to fresh air. If breathing has stopped perform artificial respiration and seek medical assistance at once.

Section 5: Fire Fighting Measures

- FLASH POINT:** Non-flammable as a solid
- EXTINGUISHING MEDIA:** This material is non-combustible. For surrounding fires use appropriate extinguishing agent. Do not use water to extinguish fires around operations involving molten metal, due to the potential for steam explosion.
- SPECIAL FIRE FIGHTING PROCEDURES:** Self-contained breathing apparatus should be worn when fighting metal dust fires. High levels of dust or fine particles in the air may ignite or explode.

Section 6: Accidental Release Measures

- SPILL OR LEAK PROCEDURES:** In solid form this material poses no special clean-up problems. Use normal clean up procedures; wet sweeping or HEPA vacuum, for clean up of dust or powder. Do not use compressed air for cleaning.

Section 7: Storage and Handling

- In solid form this material poses no special problems. Store metal in a dry area. Do not store adjacent to acids.

Section 8: Exposure Control/Personal Protection

- EYE PROTECTION REQUIREMENTS:** Safety glasses are recommended.
- SKIN PROTECTION REQUIREMENTS:** Protective gloves are recommended, to prevent mechanical irritation and dermatitis
- RESPIRATORY PROTECTION:** Not normally required. Use an appropriate NIOSH approved respirator if airborne dust concentration exceed the OSHA, PEL or ACGIH , TLV
- OTHER PROTECTIVE EQUIPMENT:** Eye wash fountain should be readily available in areas of use or handling.
- EXPOSURE LIMITS:** Not established for product as whole. Refer to Section 2.
- VENTILATION REQUIREMENTS:**
- LOCAL EXHAUST:** Recommended, when cutting, grinding or melting or any other operation where dust or fumes are created
- GENERAL:** Recommended

ENVIRONMENTAL SURVEILLANCE: If the operation generates dust or fumes, exposure to airborne materials should be determined by having air samples taken in the employees breathing zone and work area.

Section 9: Physical and Chemical Properties

PHYSICAL FORM:	Solid metal	COLOR:	Silver/Gray
ODOR:	None	MELT POINT:	2626°
SOLUBILITY IN WATER:	Insoluble	SPECIFIC GRAVITY:	N/A
VOLATILE BY WEIGHT:	Essentially zero	VAPOR PRESSURE:	N/A
DENSITY:	10.2 g/cm ³		

Section 10: Reactivity

STABILITY: This is a stable material. HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITIES: Acids and Strong Oxidizers. Mo reacts violently with oxidants

DECOMPOSITION PRODUCTS: None under proper usage conditions.

CONDITIONS TO AVOID: Conditions which create dust or fumes.

Section 11: Toxicological Information

There is no information on the toxicity of this alloy. Under normal use of the solid form of this material there are few health hazards. Welding, cutting grinding or any process creating dust, fume or oxide may cause hazardous levels of certain elements, as addressed in Section 2.

Section 12: Ecological Information

In solid form this material poses no special environmental problems. Metal powder or dust may have significant impact on air and water quality. Emissions, spills and releases to the environment should be controlled immediately.

Section 13: Disposal Considerations

Because of its high intrinsic value this material should be reclaimed. Dispose of in accordance with all applicable Federal, State and Local Regulations.

Section 14: Transportation Information

D.O.T. SHIPPING NAME:	Not regulated	TECHNICAL SHIPPING NAME:	Metal Alloy
D.O.T. HAZARD CLASS:	None	UN/NA NUMBER:	None
PRODUCT RQ:	None		

IATA, Dangerous Goods Regulations: Not Regulated, in solid form

Section 15: Regulatory Information

OSHA STATUS:
No specific regulations. The Hazard Communication Standard of the Occupational Safety and Health Administration, 29 CFR 1910.1200, considers components of this product a Hazardous Substance.

TSCA STATUS:

All components of this product are listed in the US Environmental Protection Agency on the TSCA Chemical Substance Inventory

RCRA STATUS:

Not regulated, in solid form

SARA TITLE III:

The constituents of this alloy contain hazardous substances, above one(1) percent, and are subject to the reporting requirements under SARA Title III Section 313.

SUBSTANCE	CAS No.	PERCENT MAXIMUM
N/A		

INTERNATIONAL REGULATIONS

CANADA – WHMIS Disclosure List:

Material falls into - Subdivision A of Division 2 of Class D, as defined by Section 54, of SOR/DORS/88-66

EUROPEAN UNION -

Risk Phase	R-42/43
	R- 45

Section 16: Other Information

PREPARED BY: Lee Oman, CECM

DATE OF REVISION: May 2005

This MSDS has been revised following the guidelines outlined in the American National Standard for Hazardous Materials Z400.1.1393 "Material Safety Data Sheets – Preparation"

DISCLAIMER:

The information and recommendations are taken from sources believed to be accurate. Williams Advanced Materials makes no warranty with respect of the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.



**Material Safety Data Sheet
Aluminum Products**

**WAMTF-202
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Section 1: Product and Company Identification

PRODUCT NAME: Aluminum Products
CHEMICAL FAMILY: Metal
CHEMICAL NAME: Al
MANUFACTURER: Williams Advanced Materials Inc.
PO Box 1950
Brewster, NY 10509-8950

EMERGENCY TELEPHONE: 845-279-0900 CHEMTREC 800-424-9300 (24 hour)

Section 2: Composition/Ingredients

MATERIAL	CAS No.	% wt.	* TLV, ACGIH	* PEL, OSHA
Aluminum	7429-90-5	100	10	15 T. Dust

* All concentrations are in milligram per cubic meter of air (mg/m³)

Section 3: Hazard Identification

EMERGENCY OVERVIEW:

The alloys as sold in solid form are generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

PRIMARY ROUTES OF ENTRY:

Inhalation; Skin contact.

TARGET ORGANS:

Respiratory tract; Skin

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

Listed below are certain potential health hazards, which apply to the hazardous ingredients, found in the subject material.

- ALUMINUM:** Chronic - Chronic or prolonged inhalation of finely dust may cause pulmonary fibrosis.
Acute - Dust could be an irritant to the eyes.
Chronic - Aluminum may be implicated with Alzheimer disease

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals who may have had allergic reactions to metals or sensitivity, may encounter skin rash or dermatitis, if skin contact with this product occurs. Persons with impaired pulmonary functions, may incur further impairment if dust or fumes are inhaled

CARCINOGENIC REFERENCES:

- Not recognized by OSHA as a carcinogen
- Not listed in the National Toxicology Program
- Not listed as a carcinogen by the International Agency on Research on Cancer



Section 4: First Aid Measures

- FIRST AID FOR EYES:** Dust or powder should be flushed from the eyes with running water for 15 minutes. If Irritation persists obtain medical assistance.
- FIRST AID FOR SKIN:** Skin cuts and abrasions can be treated by standard first aid. Skin contamination with dust or powder can be removed with soap and water. If irritation persists obtain medical assistance.
- FIRST AID FOR INGESTION:** Obtain medical assistance at once.
- FIRST AID FOR INHALATION:** Breathing difficulty, caused by inhalation of dust or fume requires removal to fresh air. If breathing has stopped perform artificial respiration and seek medical assistance at once.

Section 5: Fire Fighting Measures

- FLASH POINT:** Non-flammable as a solid
- EXTINGUISHING MEDIA:** This material is non-combustible. For surrounding fires use appropriate extinguishing agent. Do not use water to extinguish fires around operations involving molten metal, due to the potential for steam explosion.
- SPECIAL FIRE FIGHTING PROCEDURES:** Self-contained breathing apparatus should be worn when fighting metal dust fires. High levels of dust or fine particles in the air may ignite or explode.

Section 6: Accidental Release Measures

- SPILL OR LEAK PROCEDURES:** In solid form this material poses no special clean-up problems. Use normal clean up procedures; wet sweeping or HEPA vacuum, for clean up of dust or powder. Do not use compressed air for cleaning.

Section 7: Storage and Handling

- In solid form this material poses no special problems. Store metal in a dry area. Do not store adjacent to acids.

Section 8: Exposure Control/Personal Protection

PERSONAL PROTECTIVE EQUIPMENT:

- Eye protection requirements:** Safety glasses are recommended.
- Skin protection requirements:** Protective gloves are recommended, to prevent mechanical irritation.
- Respiratory protection:** Not normally required, use an appropriate NIOSH approved respirator if airborne dust concentration exceed THE OSHA, PEL OR ACGIH , TLV
- Other protective equipment:** Eye wash fountain should be readily available in areas of use or handling.

VENTILATION REQUIREMENTS:

- Local Exhaust:** Recommended, when cutting, grinding or melting or any other operation where dust or fumes are created
- General:** Recommended

- ENVIRONMENTAL SURVEILLANCE:** If the operation generates dust or fumes, exposure to airborne materials should be determined by having air samples taken in the employees breathing zone and work area.



Section 9: Physical and Chemical Properties

PHYSICAL FORM:	Solid metal	COLOR:	Silver/gray
ODOR:	None	MELT POINT:	650° C
SOLUBILITY IN WATER:	Insoluble	SPECIFIC GRAVITY:	N/A
VOLATILE BY WEIGHT:	Essentially zero	VAPOR PRESSURE:	N/A
DENSITY:	2.70		

Section 10: Reactivity

STABILITY: This is a stable material. HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITIES: Acetylene, Ammonia, Acids and Strong Oxidizers.

DECOMPOSITION PRODUCTS: None under proper usage conditions.

CONDITIONS TO AVOID: Conditions which create dust or fumes.

Section 11: Toxicological Information

There is no information on the toxicity of this alloy. Under normal use of the solid form of this material there are few health hazards. Welding, cutting grinding or any process creating dust, fume or oxide may cause hazardous levels of certain elements, as addressed in Section 2.

Section 12: Ecological Information

In solid form this material poses no special environmental problems. Metal powder or dust may have significant impact on air and water quality. Emissions, spills and releases to the environment should be controlled immediately.

Section 13: Disposal Considerations

Because of its high intrinsic value this material should be reclaimed. Dispose of in accordance with all applicable Federal, State and Local Regulations.

Section 14: Transportation Information

GROUND TRANSPORTATION:

D.O.T. SHIPPING NAME:	Not regulated	TECHNICAL SHIPPING NAME:	Metal Alloy
D.O.T. HAZARD CLASS:	None	UN/NA NUMBER:	None
PRODUCT RQ:	None		

AIR TRANSPORT:

ICAO/IATA; Not regulated in solid form

Section 15: Regulatory Information

HMIS Rating: Aluminum (powder)

HMIS uses an asterisk (*) to convey the presence of chronic hazard



OSHA STATUS:

No specific regulations. The Hazard Communication Standard of the Occupational Safety and Health Administration, 29 CFR 1910.1200 considers components of this product a Hazardous Substance.

TSCA STATUS:

These products are a mixture. Components of these products are listed on the TSCA Chemical Substance Inventory of Existing Chemical Substances.

RCRA STATUS: Not regulated

SARA TITLE III:

The constituents of this alloy contain hazardous substances, above one (1) percent, and are subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know act of 1986 and 40CFR372.

SUBSTANCE	CAS No.	PERCENT MAXIMUM
None		

INTERNATIONAL REGULATIONS:

CANADA – WHMIS Disclosure List:

Aluminum (as dross or particulates) fall into – Division 4, Class B,
as defined by Section 39 of SOR/DORS/88.66

EUROPEAN UNION

Risk Phrase
R-10

Section 16: Other Information

PREPARED BY: Lee Oman, CECM

DATE OF REVISION: October 2006

This MSDS has been revised following the guidelines outlined in the American National Standard for Hazardous Materials Z400.1.1393 "Material Safety Data Sheets – Preparation"

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Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees.