



MATERIAL SAFETY DATA SHEET
COMPLIES WITH 29 CFR 1910.1200.
OSHA HAZARD COMMUNICATION RULE

Revised: 01/15/08

CHEMICAL IDENTITY

LABEL IDENTITY	MOLYBDENUM SILICIDE
CALCULATED MOLECULAR WEIGHT	152.11
FORMULA	MoSi₂
CHEMICAL FAMILY	METAL
CAS REGISTRY NUMBER	12136-78-6
HAZARDOUS INGREDIENTS	MOLYBDENUM METAL
%: 100.0%	TLV: 10 mg/m³ OSHA/PEL: 10mg/m³

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM	Grey-black powder and pieces
ODOR	Odorless
BOILING POINT	NA
DENSITY (gm/cc)	NA
VAPOR PRESSURE @ 20°	NE
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	None
EVAPORATION RATE (H ₂ O=1)	NA
SOLUBILITY IN WATER	Insoluble
MELTING POINT	1870.0° C

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Non-flammable
EXTINGUISHING MEDIA	Use suitable extinguishing agent for Surrounding materials and type of fire.
SPECIAL FIRE FIGHTING PROCEDURES	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 & EXPLOSION HAZARDS	When heated to decomposition, Molybdenum Silicide may emit toxic fumes of molybdenum and silicon. Molybdenum silicide on contact with acids emit flammable hydrogen gas.



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HEALTH HAZARD INFORMATION

ROUTES OF ENTRY	INHALATION:	Yes
	SKIN:	Yes
	INGESTION:	Yes
	EYES:	Yes
	OTHER:	No

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION:

Acute: May cause irritation to the respiratory system.

Chronic: May cause pneumoconiosis.

SKIN:

Acute: Prolonged contact may cause irritation.

Chronic: No chronic health effects recorded.

INGESTION:

Acute: May cause acute molybdenum poisoning.

Chronic: May cause chronic molybdenum poisoning.

EYE:

Acute: Contact may cause irritation.

Chronic: No chronic health effects recorded.

OTHER: no reports of toxic effects of Mo in the industrial setting are known. Animal studies indicate that insoluble Mo compounds are of a low order of toxicity. Freshly generated Molybdenum Oxide fumes can be more toxic (according to certain animal tests). Inhalation of high concentrates (by animals) of Molybdenum Trioxide has caused weight loss, diarrhea, loss of muscular coordination, and a high mortality rate.

EMERGENCY FIRST AID PROCEDURES:

INGESTION: Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give oxygen if breathing is difficult, seek medical attention.

INHALATION: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult, seek medical attention.

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

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention.



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REACTIVITY DATA

STABILITY	Stable
CONDITIONS CONTRIBUTING TO UNSTABILITY	None
INCOMPATIBILITY (MATERIALS TO AVOID)	Acids, interhalogens and strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS	Molybdenum, oxides of molybdenum, Silicon and hydrogen.
HAZARDOUS POLYMERIZATION	Will Not Occur
CONDITIONS TO AVOID	None

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. 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. Use non-sparking tools.**

WASTE DISPOSAL METHOD: **Dispose of in accordance with state, local, and federal regulations.**

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION	NIOSH approved respirator
LOCAL EXHAUST	To maintain concentration at or below the PEL, TLV
MECHANICAL (general)	Recommended
PROTECTIVE GLOVES	Impervious gloves
EYE PROTECTION	Safety glasses
OTHER PROTECTIVE EQUIPMENT	Clothes to prevent skin contact.

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE: **Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.**

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE

ND= NO DATA FOUND

NR=NOT RECORDED