

MATERIAL SAFETY
DATA SHEET

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ISSUE DATE: 02-22-89
SUPERSEDES: 11-08-85

* CHANGE ** ADDITION *** CORRECTION

CHEMICAL NAME: MOLYBDENUM MILL PRODUCTS AND PARTS

TRADE NAME AND SYNONYMS: MOLYBDENUM METAL PRODUCT

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CHEMICAL FAMILY: REFRACTORY METAL

CAS NUMBER: 7439-98-7 FORMULA: MO MOLECULAR WEIGHT: 95.94

PHYSICAL DATA

APPEARANCE AND ODOR: GRAY METAL/NO ODOR

BOILING POINT: 4825 C

SPECIFIC GRAVITY (H2O=1): 10

VAPOR PRESSURE (MM HG): NA

PERCENT VOLATILE BY VOLUME: 0

VAPOR DENSITY (AIR=1): NA

EVAPORATION RATE: NA

SOLUBILITY IN WATER: INSOLUBLE

HOW BEST MONITORED: AIR SAMPLE

HAZARDOUS INGREDIENTS

MATERIAL	PERCENT BY WEIGHT	OSHA PEL	ACGIH TLV
MOLYBDENUM	>99%	10MG/M3	10MG/M3

(LIMITS ARE FOR INSOLUBLE COMPOUNDS AS MO)

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HEALTH HAZARD DATA

ROUTES OF EXPOSURE: DUST, MIST AND/OR FUMES GENERATED DURING PHYSICAL OR METALLURGICAL TREATMENT MAY BE INHALED, SWALLOWED OR COME IN CONTACT WITH THE SKIN OR EYES.

EFFECTS OF OVEREXPOSURE:

MOLYBDENUM DUST AND FUMES (FORMED ABOVE 400C) CAN CAUSE IRRITATION OF THE EYES, NOSE, THROAT, AND RESPIRATORY TRACT. ASIDE FROM ISOLATED REPORTS IN THE RUSSIAN LITERATURE SUGGESTING AN ASSOCIATION BETWEEN MOLYBDENUM EXPOSURE AND PULMONARY AND JOINT DISORDERS (GOUT-LIKE CONDITION), THERE ARE NO RECOGNIZED LONG TERM EFFECTS ATTRIBUTED TO INDUSTRIAL EXPOSURE TO MOLYBDENUM. IN GENERAL, MOLYBDENUM AND ITS COMPOUNDS ARE CONSIDERED TO BE OF LOW TOXICITY.

EMERGENCY AND FIRST AID PROCEDURES: APPLICABLE FOR DUST, MIST AND FUMES.

INHALATION: IF IRRITATION OCCURS, REMOVE FROM EXPOSURE. SEEK MEDICAL ATTENTION.

SKIN CONTACT: IF IRRITATION OCCURS, THOROUGHLY WASH AFFECTED AREA WITH MILD SOAP AND WATER AND PREVENT FURTHER CONTACT. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

EYE CONTACT: IF IRRITATION OCCURS, FLUSH WITH COPIOUS AMOUNTS OF WATER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

INGESTION: IF SUBSTANTIAL QUANTITIES ARE SWALLOWED, DILUTE WITH A LARGE AMOUNT OF WATER, INDUCE VOMITING AND SEEK MEDICAL ATTENTION.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONAGRAPHS, OTHER):

NONE OF THE COMPONENTS OF THIS MATERIAL HAVE BEEN IDENTIFIED AS KNOWN OR SUSPECTED CARCINOGENS BY NTP, IARC OR OSHA.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NA

TEST METHOD USED:

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FLAMMABLE LIMITS: NA

LEL:

UEL:

EXTINGUISHING MEDIA: FINE DUST GENERATED DURING GRINDING OPERATIONS MAY IGNITE IF ALLOWED TO ACCUMULATE AND SUBJECTED TO AN IGNITION SOURCE. COVER BURNING MATERIAL WITH AN INERT POWDER, SUCH AS DRY SAND OR LIMESTONE, TO EXCLUDE OXYGEN.

SPECIAL FIRE FIGHTING PROCEDURES:

FOR A POWDER FIRE CONFINED TO A SMALL AREA, USE A RESPIRATOR APPROVED FOR TOXIC DUSTS AND FUMES. FOR A LARGE FIRE INVOLVING THIS MATERIAL, FIREFIGHTERS SHOULD USE SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

DUST MAY PRESENT A FIRE OR EXPLOSION HAZARD UNDER FAVORING CONDITIONS OF PARTICLE SIZE, DISPERSION AND STRONG IGNITION SOURCE. HOWEVER, THIS IS NOT EXPECTED TO BE A PROBLEM UNDER NORMAL HANDLING CONDITIONS.

REACTIVITY DATA

STABILITY: STABLE

CONDITIONS TO AVOID: NA

INCOMPATIBILITY (MATERIALS TO AVOID): AVOID CONTACT OF DUST WITH STRONG OXIDIZERS AND ACIDS.

HAZARDOUS DECOMPOSITION PRODUCTS: MOLYBDENUM TRIOXIDE FUMES MAY FORM WHEN THE METAL IS EXPOSED TO HIGH TEMPERATURES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: NA

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SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: APPLICABLE FOR GRINDING DUST.

VENTILATE AREA OF SPILL. CLEAN-UP USING METHODS WHICH AVOID DUST GENERATION SUCH AS VACUUMING (WITH APPROPRIATE FILTER TO PREVENT AIRBORNE DUST LEVELS WHICH EXCEED THE PEL OR TLV), WET DUST MOP OR WET CLEAN-UP. IF AIRBORNE DUST IS GENERATED, USE AN APPROPRIATE NIOSH APPROVED RESPIRATOR.

WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH APPROPRIATE GOVERNMENT REGULATIONS. MAY BE SOLD AS SCRAP FOR RECLAIM.

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

USE AN APPROPRIATE NIOSH APPROVED RESPIRATOR IF AIRBORNE DUST CONCENTRATIONS EXCEED THE APPROPRIATE PEL OR TLV. ALL APPROPRIATE REQUIREMENTS SET FORTH IN 29 CFR 1910.134 SHOULD BE MET.

VENTILATION:

USE LOCAL EXHAUST VENTILATION WHICH IS ADEQUATE TO LIMIT PERSONAL EXPOSURE TO LEVELS WHICH DO NOT EXCEED THE PEL OR TLV. IF SUCH EQUIPMENT IS NOT AVAILABLE, USE RESPIRATORS AS SPECIFIED ABOVE.

PROTECTIVE GLOVES:

GLOVES ARE RECOMMENDED WHEN CONTACT IS LIKELY.

EYE PROTECTION:

SAFETY GLASSES OR GOGGLES ARE RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT: NA

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SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

MAINTAIN GOOD HOUSEKEEPING PROCEDURES TO PREVENT ACCUMULATION OF DUST. USE CLEAN-UP METHODS WHICH MINIMIZE DUST GENERATION SUCH AS VACUUMING OR WET CLEAN-UP. IF AIRBORNE DUST IS GENERATED, USE AN APPROPRIATE NIOSH APPROVED RESPIRATOR.

OTHER PRECAUTIONS:

WASH THOROUGHLY AFTER HANDLING AND BEFORE EATING OR SMOKING AND AT THE END OF THE WORK SHIFT. DO NOT SHAKE CLOTHING OR OTHER ITEMS TO REMOVE DUST. USE A VACUUM. AVOID DUST INHALATION AND DIRECT SKIN CONTACT.

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IN CASE OF QUESTIONS, PLEASE CALL:

GTE PRODUCTS CORPORATION

INDUSTRIAL HYGIENIST, 717-265-2121

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