

SECTION 1**CHEMICAL PRODUCTS & COMPANY IDENTIFICATION****LANGELOTH METALLURGICAL COMPANY
LLC**

AN AFFILIATE OF THOMPSON CREEK METALS COMPANY

10 LANGELOTH PLANT DRIVE**P.O. BOX 608****LANGELOTH, PA 15054**

EMERGENCY SOURCE INFORMATION:

PRODUCTION: (724) 947-2201
SALES: (303) 761-8801
FAX: (303) 761-7420
CHEMTREC:
Domestic: (800)-424-9300
International : (202)-483-7616 (collect)

SUBSTANCE: TECHNICAL MOLYBDENUM TRIOXIDE**TRADE NAMES/SYNONYMS:** TECHNICAL MOLYBDENUM OXIDE; CARBON FREE BRIQUETTES**CHEMICAL FAMILY:** INORGANIC ACID; METAL OXIDE**SECTION 2****COMPOSITION/INFORMATION ON INGREDIENTS**

COMPONENT: MOLYBDENUM TRIOXIDE
CAS NUMBER: 1313-27-5
PERCENTAGE: 80 - 90

SECTION 3**HAZARDS IDENTIFICATION**

EMERGENCY OVERVIEW: Technical Molybdenum Trioxide is odorless, and varies in color from colorless to white, yellow, or blue solids. Causes respiratory tract, skin and eye irritation. No known fire or reactivity hazard. Avoid breathing dust. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.

SECTION 4**FIRST AID MEASURES**

INHALATION: FIRST AID - Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Get medical attention if needed.

SKIN CONTACT: FIRST AID - Remove contaminated clothing and shoes. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention, if needed.

EYE CONTACT: FIRST AID - Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

INGESTION: FIRST AID - Get medical attention if needed. If vomiting occurs, keep head lower than hips to prevent aspiration.

SECTION 5**FIRE FIGHTING MEASURES**

FIRE AND EXPLOSION HAZARD: Negligible fire hazard when exposed to heat or flame.

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or regular foam. For larger fires use water spray, fog or regular foam.

FIREFIGHTING: Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Extinguish using agent indicated; do not use water stream directly on material. If large amounts of combustible materials are involved, use water spray or fog in flooding amounts. Avoid breathing corrosive dusts and fumes from burning material, keep upwind.

HAZARDOUS COMBUSTION PRODUCTS: None hazardous.

SECTION 6

ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL: Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later disposal. For small dry spills, shovel material into clean, dry container and cover. For larger spills, dike ahead of spill for later disposal. See Section 8.

SECTION 7

HANDLING AND STORAGE

STORAGE: Observe all federal, state and local regulations when storing this product.

SECTION 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

MOLYBDENUM, SOLUBLE COMPOUNDS (AS Mo):

5 mg/m³ OSHA TWA

5 mg/m³ ACGIH TWA

5 mg/m³ DFG MAK TWA (total dust);

50 mg/m³ DFG MAK 30 minute peak, average value, 1 time/shift

VENTILATION: Provide local exhaust or process enclosure ventilation to meet published exposure limits.

EYE PROTECTION: Employee should wear splash-proof or dust-resistant safety goggles to prevent eye contact with this substance.

EMERGENCY EYE WASH FACILITIES: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain within the immediate work area for emergency use.

CLOTHING: Employee should wear appropriate protective clothing and equipment to prevent repeated or prolonged skin contact with this substance.

GLOVES: Employee should wear appropriate protective gloves to prevent contact with this substance.

RESPIRATOR: The following respirators are recommended based on information found in the physical data, toxicity and health effects sections. They are ranked in order from minimum to maximum respiratory protection. The specific respirator selected must be based on contamination levels found in the workplace, must be based on the specific operation, must not exceed the working limits of the respirator and must be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA).

Any dust, mist and fume respirator.

Any chemical cartridge respirator with a dust, mist and fume filter.

Any powered air-purifying respirator with a dust, mist and fume filter.

Any type 'C' supplied-air respirator with a full face piece operated in pressure-demand or other positive-pressure mode or with a full face piece, helmet or hood operated in continuous-flow mode.

Any self-contained breathing apparatus with a full face piece operated in pressure-demand or other positive pressure mode.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH

CONDITIONS: Any self-contained breathing apparatus that has a full face piece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator that has a full face piece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: Odorless, colorless to white or slightly yellow to bluish powder, granules or rhombic crystals.

MOLECULAR WEIGHT: 143.94

MOLECULAR FORMULA: MoO₃, MoO₂, MoO₄O₁₁

BOILING POINT: 1150 C (2102 F) sublimes

MELTING POINT: 795 C (1463 F)

SPECIFIC GRAVITY: 4.692

WATER SOLUBILITY: 0.22% @ 28 C

SOLVENT SOLUBILITY: Soluble in concentrated mixtures of nitric and hydrochloric acid, concentrated nitric and sulfuric acids, ammonium or potassium bitartrate, ammonia hydroxide, alkali hydroxides, sulfuric acid.

SECTION 10

STABILITY AND REACTIVITY

REACTIVITY: Stable under normal temperatures and pressures.

CONDITIONS TO AVOID: May burn but does not ignite readily. Flammable, poisonous gases may accumulate in tanks and hopper cars. May ignite combustibles (wood, paper, oil, etc.).

INCOMPATIBILITIES:

MOLYBDENUM TRIOXIDE WITH:

BROMINE PENTAFLUORIDE: Violent reaction which may ignite

CHLORINE TRIFLUORIDE: Violent reaction which may ignite

LITHIUM: Reacts

MAGNESIUM: When heated a violent detonation may occur

POTASSIUM: Reacts with incandescence

SODIUM: Reacts violently

HAZARDOUS DECOMPOSITION: Non hazardous

POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

SECTION 11

TOXICOLOGY INFORMATION

TOXICITY DATA:

TECHNICAL MOLYBDENUM TRIOXIDE: >5000 mg/kg oral LD50-rat; >3.92 mg/l estimated inhalation LC50(4 hour)-rat; >2000 mg/kg LD50 dermal-rat

CARCINOGEN STATUS: No data available.

LOCAL EFFECTS: Irritant to eyes, respiratory tract and skin.

TARGET EFFECTS: Poisoning may affect liver, kidneys and lungs.

AT INCREASED RISK FROM EXPOSURE: Persons with decreased pulmonary function.

HEALTH EFFECTS:

ACUTE EFFECTS: The oral LD50 for rat is >5000 mg/kg.

CHRONIC EFFECTS: Some roasted molybdenite concentrates have been reported to cause fibrosis, focal pneumoconiosis, and cough in humans.

SECTION 12

ECOLOGICAL INFORMATION

ACUTE TOXICITY TO FISH: Tests on Rainbow trout conducted in compliance with UK, US, Japanese and OECD GLP Standards, established a " No observed effect level " of 32 mg/l.

TOXICITY TO DAPHNIDS: Tests on *Daphnia magna*, conducted in compliance with UK, US, Japanese and OECD GLP Standards, established a " No effect " level at 24 hours of 56 mg/l and a "No effect " level at 48 hours of 18 mg/l.

ALGAE GROWTH INHIBITION: Tests on *Scenedesmus subspiciatus*, conducted in compliance with UK, US, Japanese and OECD GLP Standards, established a " No observed effect level " greater than or equal to 100 mg/l.

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