


Plasmaterials, Inc.
 2268 Research Drive
 Livermore, CA 94550
 Ph: (925) 447-4030 Fx: (925) 447-4031
<http://plasmaterials.com>

SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION MoTe2		PRODUCT NAME Molybdenum Telluride
SUPPLIER: Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030	RECOMMENDED USE: Laboratory Chemicals Scientific Research	EMERGENCY TELEPHONE NUMBERS US: 800-424-9300 International: 001-703-527-3887

Section 2- HAZARD(S) IDENTIFICATION	
HEALTH HAZARDS: -Acute Toxicity (Oral): Category 3 (H301) -Acute Toxicity (Skin): Category 4 (H312) -Acute Toxicity (Inhalation): Category 4 (H332)	Environmental Hazards: Not Classified
Physical Hazards: Not Classified	OSHA Defined Hazards: Not Classified
LABEL ELEMENTS: Signal Word: Danger	
	
<p style="text-align: center;"><u>HAZARD STATEMENTS</u></p> <p>-H301: Toxic if swallowed -H312: Harmful in contact with skin -H332: Harmful if inhaled</p>	
<p style="text-align: center;"><u>PRECAUTIONARY STATEMENTS</u></p> <p>-P202: Do not handle until all safety precautions have been read and understood -P261: Avoid breathing dust/fume/gas/mist/vapors/spray -P264: Wash thoroughly after handling -P270: Do not eat, drink, or smoke when using this product -P271: Use only outdoors or in a well-ventilated area -P280: Wear protective gloves, protective clothing, eye protection, face protection -P301+P310+P330: If swallowed: Immediately call a poison center or doctor/physician. Rinse mouth. -P304+P340+P312: If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell. -P405: Store locked up. -P501: Dispose of contents/container in accordance with local/regional/national/international regulations</p> <p>Hazards not otherwise classified (HNOC): -None identified.</p>	

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Molecular Weight
Molybdenum Telluride	12058-20-7	351.16 g/mol

Section 4- FIRST AID MEASURES

GENERAL ADVICE: In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

INHALATION: Remove victim from exposure to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison control center or doctor/physician.

SKIN CONTACT: Wash off with soap and plenty of water. Get medical attention if irritation develops and/or persists.

EYE CONTACT: Do not rub eyes. Flush eyes with plenty of water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and/or persists.

INGESTION: Immediately call a poison control center or physician. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

MOST IMPORTANT SYMPTOMS/EFFECTS: The most important known symptoms and effects are described in the labeling (Section 2) and/or in Section 11 of SDS.

NOTES TO PHYSICIAN: Provide general supportive measures and treat symptomatically.

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:

Water Spray, Foam, Dry Chemical Powder, Carbon Dioxide (CO₂)

Unsuitable Extinguishing Media:

No information available

Specific Hazards Arising from the Chemical:

During fire, gases hazardous to health may be formed. Burning produces irritant fumes. Molybdenum Oxides. Tellurium Oxides

Protective Equipment & Precautions for Firefighters:

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

Specific Methods:

Use standard firefighting procedures and consider the hazards of other involved materials. Water mist may be used to cool closed containers.

General Fire Hazards:

No unusual fire or explosion hazards noted.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. For personal protection, see Section 8.

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

Methods for Containment & Clean Up:

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. Never return spills to original containers for re-use. For waste disposal, see Section 13.

Section 7- HANDLING AND STORAGE

Handling: Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protection equipment. Avoid release to the environment. Observe good industrial hygiene practices. Wash hands thoroughly after handling.

Storage: Store locked up. Store in original tightly closed container. Store in a dry, well-ventilated place. Store away from incompatible materials (see Section 10)

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Component	CAS-No.	Value	Control Parameters	Basis
Molybdenum Telluride	12058-20-7	TWA	0.1 mg/m3	US ACGIH Threshold Limit Values
		TWA	0.1 mg/m3	US NIOSH Pocket Guide to Chemical Hazards

Biological Limit Values: No biological exposure limits noted for the ingredient(s)

Control Parameters: Follow standard monitoring procedures.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Keep away from food and drink. Wash thoroughly after handling and before eating, drinking and/or smoking. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and Body Protection: Handle with chemical resistant gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Wear appropriate protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. Where protection from nuisance levels of dusts is desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal Hazards: Wear appropriate thermal protective clothing, when necessary.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Appearance: No information available

Odor: No information available

Odor Threshold: No information available

pH: No information available

Melting Point/Range: No information available

Boiling Point/Range: No information available

Flash Point: No information available

Evaporation Rate: No information available

Flammability (solid,gas): No information available

Flammability or Exposure Limits:

Upper: No information available

Lower: No information available

Vapor Pressure: No information available

Vapor Density: No information available

Relative Density: No information available

Solubility: No information available
Partition coefficient; n-octanol/water: No information available
Auto Ignition Temperature: No information available
Decomposition Temperature: No information available
Viscosity: No information available
Density: No information available
Specific Gravity: No information available
Explosive Properties: No information available
Oxidizing Properties: No information available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: No information available

Stability: Stable under normal conditions.

Conditions to Avoid: Contact with incompatible materials

Incompatible Materials: Strong oxidizing agents

Hazardous Decomposition Products: Molybdenum Oxides, Tellurium Oxides

Hazardous Polymerization: No information available

Hazardous Reactions: No information available

Section 11- TOXICOLOGICAL INFORMATION

Information on likely Routes of Exposure:

Inhalation: Harmful if inhaled

Skin Contact: Harmful in contact with skin

Eye Contact: No information available

Ingestion: Toxic if swallowed

Symptoms Related to the Physical, Chemical & Toxicological Characteristics: Symptoms of overexposure may be headache, dizziness, tiredness, nausea, and vomiting. Special effects may include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.

Information on Toxicological Effects:

Acute Toxicity: No information available

Skin Corrosion/Irritation: Prolonged skin contact may cause temporary irritation

Serious Eye Damage/Eye Irritation: No information available

Respiratory Sensitization: No information available

Skin Sensitization: No information available

Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.

Mutagenic Effects: No information available

Reproductive Effects: No information available

Specific Target Organ Toxicity – single exposure: No information available

Specific Target Organ Toxicity – repeated exposure: No information available

Aspiration Hazard: No information available

Chronic Effects: Prolonged inhalation may be harmful.

-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: No information available

Persistence and Degradability: No information available

Bioaccumulation/Accumulation: No information available




Mobility in Soil: No information available

Other Adverse Effects: No information available

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Instructions: Collect and reclaim or dispose in sealed containers to a licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways, or ditches with chemical or used container. Dispose of contaminated packaging as unused product. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14- TRANSPORT INFORMATION

<p>DOT:</p> <p>UN-No: UN3284 Proper Shipping Name: Tellurium Compound, n.o.s. (Molybdenum Telluride) Hazard Class: 6.1 (PGIII) Packing Group: III Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling. Special Provisions: IB8, IP3, T1, TP33 Packaging Exceptions: 153 Packaging Non Bulk: 213 Packaging Bulk: 240</p>	
<p>IATA:</p> <p>UN-No: UN3284 Proper Shipping Name: Tellurium Compound, n.o.s. (Molybdenum Telluride) Hazard Class: 6.1 (PGIII) Packing Group: III Environmental Hazards: No ERG Code: 6L Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling. Passenger & Cargo Aircraft: Allowed Cargo Aircraft Only: Allowed</p>	
<p>IMDG:</p> <p>UN-No: UN3284 Proper Shipping Name: Tellurium Compound, n.o.s. (Molybdenum Telluride) Hazard Class: 6.1 (PGIII) Packing Group: III Environmental Hazards (Marine Pollutant): No EmS: F-A, S-A Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.</p>	

Section 15- REGULATORY INFORMATION

US Federal Regulations: This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the US EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated

CERCLA Hazardous Substance List (40 CFR 302.4): Not listed

U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not regulated

SARA Hazard Categories:

Immediate Hazard: No

Delayed Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactive Hazard: No

SARA 302 Extremely Hazardous Substance: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA 304 Emergency Release Notification: Not Regulated

SARA 311/312 Hazardous Chemical: Acute Health Hazard

SARA 313 (TRI Reporting): This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

Safe Drinking Water Act (SWDA): Not regulated

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated

US California Proposition 65 (CA Safe Drinking Water & Toxic Enforcement Act of 1986): This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US California Controlled Substances. CA Dept of Justice (California Health & Safety Code Section 11100): Not Listed

US Massachusetts Right To Know – Substance List: Not regulated

US New Jersey Right To Know Components: Molybdenum Telluride (CAS No: 12058-20-7)

US Pennsylvania Right To Know – Components: Molybdenum Telluride (CAS No: 12058-20-7)

Section 16- OTHER INFORMATION

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, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

The information in this SDS was obtained from sources, which we believe are reliable. However, the information is provided without any representation or warranty, expressed or implied, regarding the accuracy or correctness.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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