SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Product Name: Molybdenum Ditelluride Powder
Synonyms: Molybdenum (IV) telluride, Molybdenum telluride
Chemical Name: Molybdenum ditelluride
Chemical Formula: MoTe2
CAS No.: 12058-20-7
EC No.: 235-028-4
REACH Registration No.: Not applicable.

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified Use(s): PC21 Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Company Identification: Ossila Limited
Address of Supplier: Solpro Business Park
Postal code: S4 7WB, UK
Telephone: +441142999180
E-mail: info@ossila.com
Office hours: 08:00 - 17:00

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Regulation (EC) No. 1272/2008 (CLP)
Acute Tox. 3: Toxic if swallowed
Acute Tox. 4: Harmful if inhaled

2.2 Label elements
According to Regulation (EC) No. 1272/2008 (CLP)
Product Name: Molybdenum Ditelluride Powder
Hazard Pictogram(s): GHS06
Signal Word(s): Danger
Hazard Statement(s): H301: Toxic if swallowed
H332: Harmful if inhaled
Precautionary Statement(s): P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

2.3 Other hazards
None known.

2.4 Additional Information
Not applicable.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
<table>
<thead>
<tr>
<th>Hazardous ingredient(s)</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>%/W/W</th>
<th>Hazard Statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molybdenum ditelluride</td>
<td>12058-20-7</td>
<td>235-028-4</td>
<td>≤100</td>
<td>Acute Tox. 3 H301</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 H332</td>
</tr>
</tbody>
</table>

3.2 Mixtures
Not applicable.
SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation
Remove person to fresh air and keep comfortable for breathing. If not breathing give artificial respiration. Call a POISON CENTER or doctor/physician.

Skin Contact
Wash with soap and flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a POISON CENTER or doctor/physician.

Eye Contact
Flush with copious amounts of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician.

Ingestion
Immediately call a POISON CENTER or doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

SECTION 11: Most important symptoms and effects, both acute and delayed

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media
As appropriate for surrounding fire.

Unsuitable extinguishing media
As appropriate for surrounding fire.

5.2 Special hazards arising from the substance or mixture

May decompose in a fire, giving off toxic and irritant vapours.

5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Wear protective clothing as per section 8.

6.2 Environmental precautions

Avoid release to the environment.

6.3 Methods and material for containment and cleaning up

Sweep up spilled substance but avoid making dust. Use vacuum equipment for collecting spilt materials, where practicable. Dispose of contents in accordance with local, state or national legislation.

6.4 Reference to other sections

See Also Section 8, 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid breathing dust/fume/gas/mist/vapours/spray. Use only in a well-ventilated area. Wear protective clothing as per section 8. Wash hands thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Storage temperature
Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Storage life
Ambient.

Incompatible materials
Product is air, heat, and moisture sensitive. Handle and store under inert gas.

7.3 Specific end use(s)

Not known. See Section: 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

UK – EH40 Workplace Exposure Limits (WEL).

<table>
<thead>
<tr>
<th>SUBSTANCE.</th>
<th>CAS No.</th>
<th>TEL (8 hr TWA ppm)</th>
<th>STEL (8 hr TWA mg/m³)</th>
<th>STEL (ppm)</th>
<th>STEL (mg/m³)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tellurium and compounds, except hydrogen telluride (as Te)</td>
<td>12058-20-7</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Region Source
EU EU Occupational Exposure Limits
United Kingdom UK Workplace Exposure Limits EH40/2005 (Third edition, published 2018)

8.2 Exposure controls

8.2.1. Appropriate engineering controls

Ensure adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.
8.2.2. Personal protection equipment

Eye Protection
Wear eye protection with side protection (EN166).

Skin protection
Wear protective clothing and gloves: Impervious gloves (EN 374).

Respiratory protection
A suitable mask with filter type A (EN14387 or EN405) may be appropriate.

Thermal hazards
None known.

8.2.3. Environmental Exposure Controls
Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance
Solid: Powder
Colour: Metallic black

Odour
Not known.
Odour threshold
Not known.
pH
Not known.
Melting point/freezing point
Not known.
Initial boiling point and boiling range
Not known.
Flash Point
Not known.
Evaporation rate
Not known.
Flammability (solid, gas)
Not known.
Upper/lower flammability or explosive limits
Not known.
Vapour pressure
Not known.
Vapour density
Not known.
Density (g/ml)
Not known.
Relative density
Not known.
Solubility/ies
Solubility (Water): Not known.
Solubility (Other): Not known.
Partition coefficient: n-octanol/water
Not known.
Auto-ignition temperature
Not known.
Decomposition Temperature (°C)
Not known.
Viscosity
Not known.
Explosive properties
Not known.
Oxidising properties
Not known.

9.2 Other information
None.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
None anticipated.

10.2 Chemical Stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Not known.

10.4 Conditions to avoid
Not known.

10.5 Incompatible materials
Not known.

10.6 Hazardous decomposition products
No hazardous decomposition products known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity - Ingestion
No data available.
Acute toxicity - Skin Contact: No data available.
Acute toxicity - Inhalation: No data available.
Skin corrosion/irritation: No data available.
Serious eye damage/irritation: No data available.
Skin sensitization data: No data available.
Respiratory sensitization data: No data available.
Germ cell mutagenicity: No data available.
Carcinogenicity: No data available.
Reproductive toxicity: No data available.
Lactation: No data available.
STOT - single exposure: No data available.
STOT - repeated exposure: No data available.
Aspiration hazard: No data available.

11.2 Other information: Not known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity: No data available.
Toxicity - Aquatic invertebrates: Not known.
Toxicity - Fish: Not known.
Toxicity - Algae: Not known.
Toxicity - Sediment Compartment: Not known.
Toxicity - Terrestrial Compartment: Not known.

12.2 Persistence and Degradation: Not known.

12.3 Bioaccumulative potential: Not known.

12.4 Mobility in soil: Not known.

12.5 Results of PBT and vPvB assessment: Not known.

12.6 Other adverse effects: Not known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Dispose of contents in accordance with local, state or national legislation. Recycle only completely emptied packaging. Normal disposal is via incineration operated by an accredited disposal contractor. Send to a licensed recycler, reclaimer or incinerator.

13.2 Additional Information: Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number: 3284
14.2 UN proper shipping name: Tellurium compound, n.o.s. (Molybdenum ditelluride)

14.3 Transport hazard class(es):
ADR/RID: 6.1
IMDG: 6.1
IATA: 6.1

14.4 Packing group: III

14.5 Environmental hazards: Not classified as a Marine Pollutant.

14.6 Special precautions for user: Not known.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: Not known.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:
European Regulations - Authorisations and/or Restrictions On Use: Not listed
Candidate List of Substances of Very High Concern for Authorisation: Not listed
REACH: ANNEX XIV list of substances subject to authorisation: Not listed
REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Not listed

Community Rolling Action Plan (CoRAP)
Not listed

Not listed

Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer
Not listed

Not listed

National regulations
Not known.

Other
Not known.

15.2 Chemical Safety Assessment
A REACH chemical safety assessment has not been carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements:

LEGEND

Acronyms
ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS : Chemical Abstracts Service
CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DNEL : Derived No Effect Level
EC : European Community
EINECS : European Inventory of Existing Commercial Chemical Substances
IATA : International Air Transport Association
IBC : Intermediate Bulk Container
ICAO : International Civil Aviation Organization
IMDG : International Maritime Dangerous Goods
LTEL : Long term exposure limit
PBT : Persistent, Bioaccumulative and Toxic
PNEC : Predicted No Effect Concentration
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
RID : Regulations concerning the International Carriage of Dangerous Goods by Rail
STEL : Short term exposure limit
STOT : Specific Target Organ Toxicity
UN : United Nations
vPvB : very Persistent and very Bioaccumulative

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