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 disulfide monolayer film on sapphire substrate
- **Synonyms**: Molybdenum sulfide, Molybdenum disulphide, Molybdenum (IV) sulfide
- **Chemical Name**: Molybdenum disulfide
- **Chemical Formula**: MoS2
- **Product code**: M2166
- **CAS No.**: 1317-33-5
- **EC No.**: Not applicable.
- **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
- **Windsor Street**
- **Sheffield**
- **Postal code**: S4 7WB, UK
- **Telephone**: +44 1142999180
- **E-mail**: info@ossila.com
- **Office hours**: 08:00 - 17:00

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3 Other hazards

None known.

2.4 Additional Information

Not applicable.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

No components need to be disclosed according to the applicable regulations.

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. Get medical advice/attention if you feel unwell.
- **Skin Contact**: Rinse skin with water. If skin irritation occurs, get medical advice/attention.
- **Eye Contact**: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **Ingestion**: Rinse out mouth with water. Get medical advice/attention if you feel unwell.

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/aerosols. Use only in a well-ventilated area. Wear protective clothing as per section 8.

7.2 Conditions for safe storage, including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Storage temperature Ambient. Storage life Stable under normal conditions.. Incompatible materials None known.

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
No Occupational Exposure Limit assigned.

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 Normally no personal respiratory protection is necessary.

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 transparent film on rigid transparent substrate
Colour:
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.
### 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: Not classified.
- Acute toxicity - Skin Contact: Not classified.
- Acute toxicity - Inhalation: Not classified.
- Skin corrosion/irritation: Not classified.
- Serious eye damage/irritation: Not classified.
- Skin sensitization data: Not classified.
- Respiratory sensitization data: Not classified.
- Germ cell mutagenicity: Not classified.
- Carcinogenicity: Not classified.
- Reproductive toxicity: Not classified.
- Lactation: Not classified.
- STOT - single exposure: Not classified.
- STOT - repeated exposure: Not classified.
- Aspiration hazard: Not classified.

11.2 Other information

Not known.

### SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

- Toxicity - Aquatic invertebrates: Not known.
- Toxicity - Fish: Not known.
- Toxicity - Algae: Not known.
- Toxicity - Sediment Compartment: Not classified.
- Toxicity - Terrestrial Compartment: Not classified.

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

IATA/IMO/RID/ADR

Not classified as hazardous for transport.

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

Candidate List of Substances of Very High Concern for Authorisation

REACH: ANNEX XIV list of substances subject to authorisation

REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Community Rolling Action Plan (CoRAP)


Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer


National regulations

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
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