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

1.1 Product identifier
Product Name: Vanadium Diselenide Crystal
Synonyms: Vanadium selenide, Bis(sелениlidene)vanadium
Chemical Name: Vanadium Diselenide
Chemical Formula: VSe2
Product code: M2154A
CAS No.: 12299-51-3
EC No.: 235-568-0
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: +441142999180
E-mail: info@ossila.com
Office hours: 08:00 - 17:00

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Acute Tox. 3: Toxic if inhaled.
STOT RE 2: May cause damage to organs through prolonged or repeated exposure.
Chronic Aquatic Tox 1: Very toxic to aquatic life with long lasting effects.

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

2.2 Label elements
According to Regulation (EC) No. 1272/2008 (CLP)
Product Name: Vanadium Diselenide Crystal

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. / REACH Registration No.</th>
<th>%W/W</th>
<th>Hazard Statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanadium Diselenide</td>
<td>12299-51-3</td>
<td>235-568-0 &lt;=100</td>
<td>&lt;=100</td>
<td>Acute Tox. 3 (H301 + H331); STOT RE 2 (H373); Aquatic Chronic 1 (H410)</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. Call a poison centre/doctor.

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. Call a poison centre/doctor.

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 spill 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. Store locked up.

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  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. Crystal
Colour: Dark brown
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: Toxic if swallowed.
Acute toxicity - Skin Contact: Not classified.
Acute toxicity - Inhalation: Toxic if inhaled.
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: May cause damage to organs through prolonged or repeated exposure.
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

14.1 UN number
UN No. 3283

14.2 UN proper shipping name
UN proper shipping name SELENIUM COMPOUND, SOLID, N.O.S.

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

14.4 Packing group
Packing group III

14.5 Environmental hazards
Environmental hazards Classified as a Marine Pollutant.

14.6 Special precautions for user
Special precautions for user Not known.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
No information available

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 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
Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer Not listed
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
STOT : Specific Target Organ Toxicity
UN : United Nations
vPvB : very Persistent and very Bioaccumulative

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