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 Zirconium diselenide crystal
Synonyms Zirconium selenide, Diselenoxozirconium
Chemical Name Zirconium diselenide
Chemical Formula ZrSe2
Product code M2202A*
CAS No. 12166-47-1
EC No. 235-325-9
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.
Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects.

2.2 Label elements
According to Regulation (EC) No. 1272/2008 (CLP)
Product Name Zirconium diselenide crystal
Hazard Pictogram(s)

Signal Word(s) Danger
Hazard Statement(s) H301 + H331: Toxic if swallowed or if inhaled.
H373: May cause damage to organs through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s) P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P301 + P310 + P330: IF SWALLOWED: Immediately call a POISON CENTER or
doctor/physician. Rinse mouth.
P304 + P340 + P311: IF INHALED: Remove person to fresh air and keep
comfortable for breathing. Call a POISON CENTER or doctor/physician.

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>
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<td>12166-47-1</td>
<td>235-325-9</td>
<td>&lt;100</td>
<td>Acute Tox. 3 H301</td>
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<td>Acute Tox. 3 H331</td>
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<td>Aquatic Acute 1 H400</td>
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<td></td>
<td></td>
<td>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 CENTER or doctor/physician.

**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**
Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

**4.2 Most important symptoms and effects, both acute and delayed**

**SECTION 11: Most important symptoms and effects, both acute and delayed**
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**
Firefighters 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. 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: Golden 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  Very toxic to aquatic life with long lasting effects.
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  3283
UN No.

14.2 UN proper shipping name  Selenium compound, solid, n.o.s.
UN proper shipping name

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

14.4 Packing group  III
Packing group

14.5 Environmental hazards  Classified as a Marine Pollutant.
Environmental hazards

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

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
LTCL : 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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