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

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product Details

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Gallium selenide crystal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Gallium (II) selenide, Selanylidenegallium</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Gallium selenide</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>GaSe</td>
</tr>
<tr>
<td>Product Code</td>
<td>M2138A</td>
</tr>
<tr>
<td>CAS No.</td>
<td>12024-11-2</td>
</tr>
<tr>
<td>EC No.</td>
<td>234-689-6</td>
</tr>
<tr>
<td>REACH No.</td>
<td>A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals

1.3. Supplier details

<table>
<thead>
<tr>
<th>Company Identification</th>
<th>Ossila Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of Supplier</td>
<td>Solpro Business Park</td>
</tr>
<tr>
<td></td>
<td>Windsor Street, Sheffield</td>
</tr>
<tr>
<td>Postal Code</td>
<td>S4 7WB, UK</td>
</tr>
<tr>
<td>Telephone</td>
<td>0114 2999 180</td>
</tr>
<tr>
<td>Email address</td>
<td><a href="mailto:info@ossila.com">info@ossila.com</a></td>
</tr>
</tbody>
</table>

2. Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) 1272/2008 (CLP)
Acute Tox. 3 – Ingestion
Acute Tox. 3 – Inhalation
STOT RE 2
Aquatic Acute 1
Aquatic Chronic 1

2.2. Label elements

Regulation (EC) 1272/2008 (CLP)

Hazard Pictogram(s)

Signal Word(s) Danger

Hazard Statements
H301 Toxic if swallowed
H331 Toxic if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
Precautionary Statements

P260   Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P310  IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P304+P340  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405   Store locked up.
P501   Dispose of contents in accordance with local, state or national legislation.

2.3. Other hazards

None.

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>Gallium selenide</td>
<td>12024-11-2</td>
<td>234-689-6</td>
<td>≤ 100</td>
<td>Acute Tox. 3: H301+H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STOT RE 2: H373</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1: H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 1: H410</td>
</tr>
</tbody>
</table>

4. First aid measures

4.1. Description of first aid measures

Inhalation       Call a poison centre/doctor
Skin contact     Wash with soap and water. Get medical attention if you feel unwell.
Eye contact      Flush with copious amounts of water as a precaution. Get medical attention if you feel unwell.
Ingestion        Rinse out mouth with water. Immediately call a poison centre/doctor.

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

The most important known symptoms and effects are described in section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Get medical attention if you feel unwell. Treat symptomatically.

5. Fire fighting

5.1. Extinguishing media

Suitable extinguishing media: As appropriate for surrounding fire.

5.2. Special hazards arising from the substance of 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.
6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protective equipment (section 8). Avoid dust formation. Ensure room is well ventilated.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Containment and cleaning
Contain and clean up spill if safe to do so using an electrically protected vacuum cleaner or by wet-brushing. Dispose of dry waste in closed container for proper disposal according to local regulations.

7. Handling and storage

7.1. Precautions for safe handling
Avoid formation of dust and aerosols. Provide exhaust ventilation in places where dust is formed.

7.2. Conditions for safe storage, including any incompatibilities
Store in a cool, dry and well-ventilated place inside of a tightly sealed container. Reseal containers that have been opened and keep upright to prevent leakage. Store locked up.

<table>
<thead>
<tr>
<th>Storage temperature</th>
<th>Ambient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage life</td>
<td>Stable under normal conditions.</td>
</tr>
</tbody>
</table>

7.3. Specific end uses
Use in laboratories.

8. Exposure controls / Personal protection

8.1. Control parameters

8.1.1 Occupational Exposure Limits
Contains no substances with occupational exposure limit values.

8.2. Exposure controls

8.2.1 Engineering measures
Handle in accordance with good industrial engineering/laboratory practices for hygiene and safety. Ensure eyewash stations and safety showers are close to the laboratory workstation. Ensure good general ventilation is present when handling the product.

8.2.2 Personal protective equipment

<table>
<thead>
<tr>
<th>Eye Protection</th>
<th>Wear safety glasses with side-shields conforming to appropriate government standards such as NOISH (US) or EN166 (EU).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Protection</td>
<td>Wear protective clothing and gloves. Use gloves that satisfy the specifications of your national standards (e.g. EN 374). Wash hands after handling. Wash contaminated clothing after use.</td>
</tr>
<tr>
<td>Respirators:</td>
<td>Use multi-purpose combination particle respirator N99 (US) or type ABEK P2 (EN 14387) respirator cartridges as a backup to engineering controls. Respirators should be approved under appropriate government standards such as NIOSH (US) or CEN (EU).</td>
</tr>
</tbody>
</table>

8.2.3 Environmental Exposure Controls
Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.
9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid dark copper crystal</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>960 °C</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other safety information

No data available.

10. Stability and reactivity

10.1 Reactivity

No data available.

10.2. Chemical stability

Stable under normal temperatures and pressures under recommended storage conditions.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Strong oxidising agents.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity
Toxic if swallowed or if inhaled.
Skin corrosion/irritation  
No data available.

Serious eye damage/irritation  
No data available.

Respiratory sensitisation  
No data available.

Skin sensitisation  
No data available.

Germ cell mutagenicity  
No data available.

Carcinogenicity  
No data available.

Reproductive toxicity  
No data available.

STOT - single exposure  
No data available.

STOT - repeated exposure  
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard  
No data available.

Routes of exposure  
Eye contact, ingestion, inhalation, skin contact.

Signs and Symptoms of Exposure  
No data available.

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

12. Ecological information  

12.1. Toxicity  
Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability  
No data available.

12.3. Bioaccumulative potential  
No data available.

12.4. Mobility in soil  
No data available.

12.5. Results of PBT and vPvB assessment  
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6. Other adverse effects  
No data available.

13. Disposal  

13.1. Waste treatment methods  
Product  
Observe all federal, state and local environmental regulations and directives on waste and hazardous waste. Offer surplus material to a licensed professional waste disposal professional.
Contaminated packaging
Dispose of as unused product.

14. Transport

14.1 UN number
3283

14.2 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
III

14.5 Environmental hazards
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
No information available.

15. Regulatory information
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006, the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available.

15.2 Chemical safety assessment
No chemical safety report/assessment was carried out for this product.

16. Other information

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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