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

1.1 **Product identifier**
- **Product Name**: Zirconium trisulfide (ZrS₃) crystal
- **Synonyms**: Zirconium trisulfide
- **Chemical Name**: Zirconium trisulfide
- **Chemical Formula**: ZrS₃
- **Product code**: M2203A
- **CAS No.**: 12166-31-3
- **EC No.**: Not available.
- **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, S4 7WB, UK
- **Telephone**: +44 114 299 9180
- **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 crystal
Colour: Reddish 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.
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 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

<table>
<thead>
<tr>
<th>European Regulations - Authorisations and/or Restrictions On Use</th>
<th>Not listed</th>
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</thead>
<tbody>
<tr>
<td>Candidate List of Substances of Very High Concern for Authorisation</td>
<td>Not listed</td>
</tr>
<tr>
<td>REACH: ANNEX XIV list of substances subject to authorisation</td>
<td>Not listed</td>
</tr>
<tr>
<td>REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</td>
<td>Not listed</td>
</tr>
<tr>
<td>Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer</td>
<td>Not listed</td>
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<tr>
<td>National regulations Other</td>
<td>Not known</td>
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</tbody>
</table>

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

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