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

1.1 Product identifier
Product Name: SWCNT
Synonyms: SWNT
Chemical Name: Single-Walled Carbon Nanotubes
Chemical Formula: C
CAS No.: 308068-56-6
EC No.: Not available.
Index 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, Research and development use only

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

1.4 Emergency telephone number
Emergency Phone #:
Europe, Middle East, Africa: +44 20 3885 0382 (CHEMTREC)
North America: +1 703 527 3887
Central America: +52 55 8526 4930
South America: +55 11 4349 1359
Asia, India, and Oceania: +65 3163 8374

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Regulation (EC) No. 1272/2008 (CLP)
Eye Irrit. 2: Causes serious eye irritation
STOT SE 3: May cause respiratory irritation

2.2 Label elements
According to Regulation (EC) No. 1272/2008 (CLP)
Product Name: SWCNT
Hazard Pictogram(s):
GHS07

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Walled Carbon Nanotubes</td>
<td>308068-56-6</td>
<td>Not available.</td>
<td>&gt;95%</td>
<td>Eye Irrit. 2 H319</td>
</tr>
<tr>
<td>Carbon Nanotubes (other)</td>
<td></td>
<td></td>
<td>&lt;5%</td>
<td>STOT SE 3 H335</td>
</tr>
</tbody>
</table>

3.2 Mixtures
Not applicable.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures
General Advice
First aiders should ensure they have taken adequate steps to protect themselves from exposure (see Section 8 for recommended personal protection equipment). Show this safety data sheet to the doctor in attendance.

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
Most important symptoms and effects, both acute and delayed, are included on labelling (Section 2.2) and in Section 11.

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
Carbon oxides

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
Follow safe handling advice and personal protective equipment recommendations (as per section 8). Provide adequate ventilation.

6.2 Environmental precautions
Avoid release to the environment.

6.3 Methods and material for containment and cleaning up
Sweep up spilled substance - 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
Advice on safe handling
Avoid inhalation, ingestion, and contact with skin and eyes. Use only in a well-ventilated area. Wear protective clothing as per section 8.

Hygiene measures
Keep away from food and drink. Wash hands after handling, before breaks, and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities
Storage temperature
Ambient.

Storage life
Stable under normal conditions.

Incompatible materials
None known.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
8.1.1 Occupational Exposure Limits

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>CAS No.</th>
<th>LTEL (8 hr TWA ppm)</th>
<th>LTEL (8 hr TWA mg/m³)</th>
<th>STEL (ppm)</th>
<th>STEL (mg/m³)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite inhalable dust</td>
<td>308068-56-6</td>
<td>10</td>
<td>10</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Graphite respirable</td>
<td>308068-56-6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Region: EU
Source: EU Occupational Exposure Limits
United Kingdom UK Workplace Exposure Limits EH40/2005 (Third edition, published 2018)

8.2 Exposure controls
8.2.1 Appropriate engineering controls
Ensure adequate ventilation and/or exhaust. 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 tested and approved under appropriate government standards such as EN166 (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use and proper glove removal techniques should be used. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid: Fibrous Powder.</td>
</tr>
<tr>
<td>Colour</td>
<td>Black</td>
</tr>
<tr>
<td>Odour</td>
<td>Not known</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not known</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not known</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Not known</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not known</td>
</tr>
<tr>
<td>Lower and upper explosion limit</td>
<td>Not known</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not known</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>Not known</td>
</tr>
<tr>
<td>Decomposition temperature (°C)</td>
<td>Not known</td>
</tr>
<tr>
<td>pH</td>
<td>Not known</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Not known</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Solubility (Water): Insoluble.</td>
</tr>
<tr>
<td>Solubility (Other): Not known</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water (log value)</td>
<td>Not known</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not known</td>
</tr>
<tr>
<td>Density</td>
<td>Not known</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not known</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>Not known</td>
</tr>
<tr>
<td>Particle characteristics</td>
<td>Not known</td>
</tr>
</tbody>
</table>

9.2 Other information

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
None anticipated.

10.2 Chemical Stability
Stable under recommended storage 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
In the event of fire: see Section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
- Acute toxicity - Ingestion: No data available.
- Acute toxicity - Skin Contact: No data available.
- Acute toxicity - Inhalation: No data available.
- Skin corrosion/irritation: No data available.
- Serious eye damage/irritation: No data available.
- Skin sensitization data: No data available.
- Respiratory sensitization data: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicology: No data available.
- Lactation: No data available.
- STOT - single exposure: No data available.
- STOT - repeated exposure: No data available.
- Aspiration hazard: No data available.

11.2 Information on other hazards
- 11.2.1 Endocrine disrupting properties: None known.
- 11.2.2 Information on other hazards: None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
- Aquatic invertebrates: No data available.
- Fish: No data available.
- Algae: No data available.
- Sediment Compartment: Not classified.
- 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
- This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties
- Not known.

12.7 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 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: Not listed
- REACH: ANNEX XIV list of substances subject to authorisation: Not listed
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACH: Annex XVII Restrictions on the manufacture, placing on the market</td>
<td>Not listed</td>
</tr>
<tr>
<td>use of certain dangerous substances, mixtures and articles</td>
<td></td>
</tr>
<tr>
<td>Community Rolling Action Plan (CoRAP)</td>
<td>Not listed</td>
</tr>
<tr>
<td>on persistent organic pollutants</td>
<td></td>
</tr>
<tr>
<td>Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer</td>
<td>Not listed</td>
</tr>
<tr>
<td>concerning the export and import of hazardous chemicals</td>
<td></td>
</tr>
<tr>
<td>National regulations</td>
<td>Not known.</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>15.2 Chemical Safety Assessment</td>
<td></td>
</tr>
<tr>
<td>A REACH chemical safety assessment has not been carried out.</td>
<td></td>
</tr>
</tbody>
</table>

**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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