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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product Name</th>
<th>SWCNT-OH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Hydroxyl-functionalised single-walled carbon nanotubes SWNT-OH, SWCNT-OH</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Single-walled carbon nanotubes – hydroxyl functionalised</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>C (-OH)</td>
</tr>
<tr>
<td>CAS No.</td>
<td>7440-44-0</td>
</tr>
<tr>
<td>EC No.</td>
<td>231-153-3</td>
</tr>
<tr>
<td>REACH Registration No.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

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

- Regulation (EC) No. 1272/2008 (CLP): Eye Irrit. 2A: Causes serious eye irritation
- STOT SE 3: May cause respiratory irritation

2.2 Label elements

<table>
<thead>
<tr>
<th>Product Name</th>
<th>SWCNT-OH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Pictogram(s)</td>
<td>GHS07</td>
</tr>
<tr>
<td>Signal Word(s)</td>
<td>Warning</td>
</tr>
<tr>
<td>Hazard Statement(s)</td>
<td>H319: Causes serious eye irritation</td>
</tr>
<tr>
<td>Precautionary Statement(s)</td>
<td>P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312: Call a POISON CENTER or doctor if you feel unwell. P337 + P313: If eye irritation persists: Get medical advice/attention.</td>
</tr>
</tbody>
</table>

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>%W/W</th>
<th>Hazard Statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-walled carbon nanotubes – hydroxyl functionalised</td>
<td>7440-44-0</td>
<td>&gt;90</td>
<td>Eye Irrit. 2A H319 STOT SE 3 H335</td>
</tr>
<tr>
<td>Carbon Nanotubes (other)</td>
<td>7440-44-0</td>
<td>&lt;10</td>
<td>Eye Irrit. 2A H319 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
   - 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 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 vapours/mist/dust/aerosols. Use only in a well-ventilated area. Wear protective clothing as per section 8. Wash hands thoroughly after handling.

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)
   - Not known. See Section: 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
   - 8.1.1 Occupational Exposure Limits
     - UK – EH40 Workplace Exposure Limits (WEL).

     Occupational Exposure Limits
     | SUBSTANCE                        | CAS No. | LTEL (8 hr TWA ppm) | LTEL (8 hr TWA mg/m³) | STEL (ppm) | STEL (mg/m³) | Note |
     |---------------------------------|---------|---------------------|-----------------------|------------|-------------|------|
     | Graphite inhalable dust         | 7440-44-0 | 10                  |                       |            |             |      |
     | Graphite respirable             | 7440-44-0 | 4                   |                       |            |             |      |

     Region: EU
     Source: EU Occupational Exposure Limits

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: Fibrous Powder.
- Colour  
  Black.
- 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): Limited.
  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  
  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 toxicity 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 Other information 
Not known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity 
Toxicity - Aquatic invertebrates No data available.
Toxicity - Fish No data available.
Toxicity - Algae No data available.
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 
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
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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