SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : COPR 99 PUMPABLE

SDS-Identcode : 509G

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

Use of the Substance/Mixture : Industrial use, Thread Compound (Pipe Dope) and Jacking grease for use in Offshore industries, Mining, (without offshore industries)

Recommended restrictions on use : Do not use on oxygen lines or in oxygen enriched atmospheres.

1.3 Details of the supplier of the safety data sheet

Company : Bestolife Corporation INTERTEK FRANCE
2126 Vanco Drive 27400 HEUDEBOUVILLE
75061, FRANCE Irving

Telephone : 855-243-9164/972-865-8961 +33 385 991270

Telefax : 214-631-3047 +33 385 991288

E-mail address of person responsible for the SDS : www.bestolife.com/christian.gimenez@intertek.com/if.reach@intertek.com

1.4 Emergency telephone number

CHEMTREC: +(44)-870-8200418; Internntnl: +1-703-527-3887 NHS Drc: +44 0845 4647 (Medical only)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2 : H319: Causes serious eye irritation.
Skin sensitisation, Category 1 : H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms : ☢️

Signal word : Warning
Hazard statements: H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.

Precautionary statements:  
Prevention:  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves/ eye protection/ face protection.  
Response:  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

Hazardous components which must be listed on the label:  
Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate)  
Calcium petroleum sulfonates

2.3 Other hazards  
None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures  

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No. EC-No. Index-No.</th>
<th>Concentration (w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copper metal powder</td>
<td>7440-50-8 231-159-6 01-2119480154-42</td>
<td>Flam. Sol. 1; H228 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10</td>
</tr>
<tr>
<td></td>
<td>Calcium oxide</td>
<td>1305-78-8 215-138-9 01-2119475325-36</td>
<td>Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335</td>
</tr>
<tr>
<td></td>
<td>Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate)</td>
<td>Not Assigned 01-2119980988-16</td>
<td>Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1B; H317</td>
</tr>
<tr>
<td></td>
<td>Quartz</td>
<td>14808-60-7 238-878-4</td>
<td>Carc. 1A; H350i STOT RE 1; H372 (Lungs)</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

Protection of first-aiders: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

If inhaled: If inhaled, remove to fresh air. Get medical attention if symptoms occur.

In case of skin contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Risks: May cause an allergic skin reaction. Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical
5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.
- Hazardous combustion products: Carbon oxides, Metal oxides, Fluorine compounds, Sulphur oxides

5.3 Advice for firefighters

- Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
- Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions: Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

6.2 Environmental precautions

- Environmental precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

- Methods for cleaning up: Sweep up or vacuum up spillage and collect in suitable container for disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

   Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSOAL PROTECTION section.

   Advice on safe handling: For outdoor use only
   - Do not get on skin or clothing.
   - Avoid breathing dust, fume, gas, mist, vapours or spray.
   - Do not swallow.
   - Do not get in eyes.
   - Wash skin thoroughly after handling.
   - Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
   - Take care to prevent spills, waste and minimize release to the environment.

   Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace.
   - Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

   Requirements for storage areas and containers: Keep in properly labelled containers. Store in accordance with the particular national regulations.

   Advice on common storage: Do not store with the following product types:
   - Strong oxidizing agents

7.3 Specific end use(s)

   Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>TWA (Respirable dust)</td>
<td>1 mg/m3</td>
<td>GB EH40</td>
</tr>
</tbody>
</table>

Further information: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols., Talc is defined as the mineral talc together with other hydrous phyllosilicates including chlorite and carbonate materials which occur with it, but excluding amphibole asbestos and crystalline silica., The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m-3 8-hour TWA of inhalable dust or 4 mg.m-3 8-hour TWA of respira-
ble dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed ‘inhaling’ and ‘respirable’. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.

<table>
<thead>
<tr>
<th>Substance</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite 7782-42-5</td>
<td>TWA</td>
<td>(inhalable dust)</td>
<td></td>
<td>10 mg/m³ GB EH40</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>(Respirable dust)</td>
<td></td>
<td>4 mg/m³ GB EH40</td>
</tr>
<tr>
<td>Copper metal powder 7440-50-8</td>
<td>TWA</td>
<td>(Fumes)</td>
<td></td>
<td>0.2 mg/m³ (Copper) GB EH40</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>(Dusts and mists)</td>
<td></td>
<td>1 mg/m³ (Copper) GB EH40</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>(Dusts and mists)</td>
<td></td>
<td>2 mg/m³ (Copper) GB EH40</td>
</tr>
<tr>
<td>Calcium oxide 1305-78-8</td>
<td>TWA</td>
<td></td>
<td></td>
<td>2 mg/m³ GB EH40</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>(Respirable fraction)</td>
<td></td>
<td>1 mg/m³ 2017/164/EU</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>(Respirable fraction)</td>
<td></td>
<td>4 mg/m³ 2017/164/EU</td>
</tr>
<tr>
<td>Quartz 14808-60-7</td>
<td>TWA</td>
<td>(Respirable dust)</td>
<td></td>
<td>0.1 mg/m³ 2004/37/EC</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>(Respirable fraction)</td>
<td></td>
<td>4 mg/m³ GB EH40</td>
</tr>
</tbody>
</table>

These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Quartz

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:
## Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper metal powder</td>
<td>Fresh water</td>
<td>7.8 µg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>5.2 µg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>230 µg/l</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium petroleum sulfonates</td>
<td>Fresh water</td>
<td>11.75 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>3.33 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>1.03 mg/cm²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.9 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.667 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.513 mg/cm²</td>
</tr>
<tr>
<td>Consumers Skin contact</td>
<td>Long-term local effects</td>
<td>0.8333 mg/kg bw/day</td>
</tr>
</tbody>
</table>

### Graphite
- **Consumers Inhalation**
  - Long-term local effects: 0.3 mg/m³
- **Consumers Ingestion**
  - Long-term systemic effects: 813 mg/kg bw/day
- **Workers Inhalation**
  - Long-term local effects: 1.2 mg/m³
- **Copper metal powder**
  - Workers Inhalation
    - Long-term local effects: 1.2 mg/m³
  - Workers Skin contact
    - Long-term systemic effects: 137 mg/kg bw/day
  - Workers Skin contact
    - Acute systemic effects: 237 mg/kg bw/day
- **Consumers Inhalation**
  - Acute systemic effects: 20 mg/m³
  - Long-term local effects: 1 mg/m³

### Calcium oxide
- **Workers Inhalation**
  - Long-term local effects: 1 mg/m³
- **Consumers Inhalation**
  - Acute local effects: 4 mg/m³
  - Long-term local effects: 1 mg/m³

### Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate)
- **Workers Inhalation**
  - Long-term systemic effects: 70 mg/m³
- **Workers Skin contact**
  - Long-term systemic effects: 10 mg/kg bw/day
- **Workers Skin contact**
  - Long-term local effects: 1.03 mg/cm²
- **Consumers Inhalation**
  - Long-term systemic effects: 2.9 mg/m³
- **Consumers Skin contact**
  - Long-term systemic effects: 1.667 mg/kg bw/day
- **Consumers Skin contact**
  - Long-term local effects: 0.513 mg/cm²
- **Consumers Ingestion**
  - Long-term systemic effects: 0.8333 mg/kg bw/day
### 8.2 Exposure controls

#### Engineering measures
Minimize workplace exposure concentrations.

#### Personal protective equipment

<table>
<thead>
<tr>
<th>Material</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Eye protection** | Wear the following personal protective equipment:  
Safety goggles  
Equipment should conform to BS EN 166 |
| **Hand protection** | Chemical-resistant gloves |
| **Remarks** | Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the |
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Skin and body protection: Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Respiratory protection: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Equipment should conform to BS EN 14387

Filter type: Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: Viscous semi-solid
Colour: Copper
Odour: Petroleum
Odour Threshold: No data available
pH: Not applicable (not an aqueous solution)
Melting point/freezing point: No data available
Initial boiling point and boiling range: No data available
Flash point: Not applicable
Evaporation rate: Not applicable
Flammability (solid, gas): Not classified as a flammability hazard
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapour pressure: Not applicable
Relative vapour density: Not applicable
Relative density: 1.2
Density: No data available
Solubility(ies)
Water solubility: Negligible
Partition coefficient: n-octanol/water: Not applicable
Auto-ignition temperature: No data available
Decomposition temperature : No data available
Viscosity
  Viscosity, dynamic : No data available
  Viscosity, kinematic : Not applicable
Flow time : No data available
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information
  Molecular weight : No data available
  Particle size : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
  Not classified as a reactivity hazard.

10.2 Chemical stability
  Stable under normal conditions.

10.3 Possibility of hazardous reactions
  Hazardous reactions : Can react with strong oxidizing agents.

10.4 Conditions to avoid
  Conditions to avoid : None known.

10.5 Incompatible materials
  Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products
  No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
  Information on likely routes of exposure :
    Skin contact
    Ingestion
    Eye contact

  Acute toxicity
  Not classified based on available information.
Components:

Copper metal powder:
- Acute oral toxicity: LD50 (Rat): > 2,500 mg/kg
  Method: OECD Test Guideline 423
  Assessment: The substance or mixture has no acute oral toxicity
- Acute inhalation toxicity: LC50 (Rat): > 5.11 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
  Method: OECD Test Guideline 436
  Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
  Method: OECD Test Guideline 402
  Assessment: The substance or mixture has no acute dermal toxicity

Calcium oxide:
- Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
  Method: OECD Test Guideline 425
- Acute inhalation toxicity: (Rat): > 5 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
  Method: OECD Test Guideline 436
  Remarks: Based on data from similar materials
- Acute dermal toxicity: LD50 (Rabbit): > 2,500 mg/kg
  Method: OECD Test Guideline 402
  Assessment: The substance or mixture has no acute dermal toxicity
  Remarks: Based on data from similar materials

Calcium bis(di C8-C10, branched, C9 rich, alkyl-naphthalenesulphonate):
- Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
- Acute dermal toxicity: LD50 (Rabbit): > 5,000 mg/kg

Quartz:
- Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg

Calcium petroleum sulphonates:
- Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
  Method: OECD Test Guideline 401
- Acute inhalation toxicity: LC50 (Rat): > 1.9 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
SAFETY DATA SHEET  
according to Regulation (EC) No. 1907/2006

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<table>
<thead>
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<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
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<tbody>
<tr>
<td>10.0</td>
<td>06.11.2020</td>
<td>121187-00020</td>
<td>06.05.2020</td>
<td>18.05.2015</td>
</tr>
</tbody>
</table>

Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity: LD50 (Rabbit): > 4,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation
Not classified based on available information.

Components:

### Copper metal powder:
- **Species:** Rabbit
- **Method:** OECD Test Guideline 404
- **Result:** No skin irritation

### Calcium oxide:
- **Species:** Rabbit
- **Method:** OECD Test Guideline 404
- **Result:** Skin irritation
- **Remarks:** Based on data from similar materials

### Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):
- **Species:** Rabbit
- **Result:** Skin irritation
- **Remarks:** Based on data from similar materials

### Calcium petroleum sulfonates:
- **Species:** Rabbit
- **Method:** OECD Test Guideline 404
- **Result:** No skin irritation
- **Remarks:** Based on data from similar materials

**Serious eye damage/eye irritation**
Causes serious eye irritation.

**Product:**
- **Result:** Irritation to eyes, reversing within 21 days

Components:

### Copper metal powder:
- **Species:** Rabbit
- **Method:** OECD Test Guideline 405
- **Result:** No eye irritation

### Calcium oxide:
- **Species:** Rabbit
Method: OECD Test Guideline 405
Result: Irreversible effects on the eye

**Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):**

- **Species:** Rabbit
- **Result:** Irritation to eyes, reversing within 21 days
- **Remarks:** Based on data from similar materials

**Calcium petroleum sulfonates:**

- **Species:** Rabbit
- **Method:** OECD Test Guideline 405
- **Result:** No eye irritation
- **Remarks:** Based on data from similar materials

**Respiratory or skin sensitisation**

**Skin sensitisation**
May cause an allergic skin reaction.

**Respiratory sensitisation**
Not classified based on available information.

**Components:**

**Copper metal powder:**

- **Test Type:** Maximisation Test
- **Exposure routes:** Skin contact
- **Species:** Guinea pig
- **Method:** OECD Test Guideline 406
- **Result:** negative

**Calcium oxide:**

- **Test Type:** Local lymph node assay (LLNA)
- **Exposure routes:** Skin contact
- **Species:** Mouse
- **Method:** OECD Test Guideline 429
- **Result:** negative
- **Remarks:** Based on data from similar materials

**Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):**

- **Test Type:** Buehler Test
- **Exposure routes:** Skin contact
- **Species:** Guinea pig
- **Result:** positive
- **Remarks:** Based on data from similar materials
- **Assessment:** Probability or evidence of low to moderate skin sensitisation rate in humans

**Calcium petroleum sulfonates:**
Test Type: Buehler Test
Exposure routes: Skin contact
Species: Guinea pig
Result: positive

Assessment: Probability or evidence of low to moderate skin sensitisation rate in humans

Germ cell mutagenicity
Not classified based on available information.

Components:

Copper metal powder:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Calcium oxide:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials
Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
Remarks: Based on data from similar materials

Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials
Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
Remarks: Based on data from similar materials
Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Based on data from similar materials

Calcium petroleum sulfonates:  
Genotoxicity in vitro  
Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo  
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Result: negative

Carcinogenicity  
Not classified based on available information.

Product:  
Carcinogenicity - Assessment: Petroleum distillates have been classified as not carcinogenic based on DMSO extract content < 3% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note L).

Components:  
Calcium oxide:  
Species: Rat  
Application Route: Ingestion  
Exposure time: 104 weeks  
Result: negative  
Remarks: Based on data from similar materials

Quartz:  
Species: Humans  
Application Route: Inhalation (dust/mist/fume)  
Result: positive  
Remarks: These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Carcinogenicity - Assessment: Positive evidence from human epidemiological studies (inhalation)

Reproductive toxicity  
Not classified based on available information.

Components:  
Copper metal powder:  
Effects on fertility: Test Type: Two-generation reproduction toxicity study  
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development:
Test Type: Embryo-foetal development
Species: Rabbit
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Calcium oxide:
Effects on fertility:
Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development:
Test Type: Embryo-foetal development
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

Calcium bis(di C8-C10, branched, C9 rich, alkylnaphthalenesulphonate):
Effects on fertility:
Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development:
Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Calcium petroleum sulphonates:
Effects on fertility:
Test Type: One-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 415
Result: negative
Remarks: Based on data from similar materials

STOT - single exposure
Not classified based on available information.
Components:

Calcium oxide:
Assessment: May cause respiratory irritation.

STOT - repeated exposure
Not classified based on available information.

Components:

Quartz:
Exposure routes: inhalation (dust/mist/fume)
Target Organs: Lungs
Assessment: Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less.

Repeated dose toxicity

Components:

Copper metal powder:
Species: Rat
NOAEL: >= 2 mg/m3
Application Route: inhalation (dust/mist/fume)
Exposure time: 28 Days

Calcium oxide:
Species: Rat
NOAEL: >= 0.399 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 90 Days
Method: OECD Test Guideline 413

Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):
Species: Rat
NOAEL: 100 mg/kg
LOAEL: 300 mg/kg
Application Route: Ingestion
Exposure time: 90 Days
Method: OECD Test Guideline 408

Quartz:
Species: Humans
LOAEL: 0.053 mg/m3
Application Route: inhalation (dust/mist/fume)
Remarks: These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Calcium petroleum sulfonates:
SECTION 12: Ecological information

12.1 Toxicity

| Product: | Toxicity to fish | LC50 (Pimephales promelas (fathead minnow)): 1,064,120 mg/l |
| Application Route: | Skin contact | Exposure time: 96 h |
| Exposure time: | 28 Days | Method: OECD Test Guideline 203 |
| Remarks: | Based on data from similar materials | |

| Product: | Toxicity to daphnia and other aquatic invertebrates | EC50 (Daphnia magna (Water flea)): 16,410 mg/l |
| Application Route: | Skin contact | Exposure time: 96 h |
| Exposure time: | 28 Days | Method: OECD Test Guideline 202 |
| Remarks: | Based on data from similar materials | |

| Product: | Toxicity to algae/aquatic plants | EC50 (Selenastrum capricornutum (green algae)): 110,268 mg/l |
| Application Route: | Skin contact | Exposure time: 96 h |
| Exposure time: | 28 Days | Method: OECD Test Guideline 201 |
| Remarks: | Based on data from similar materials | |

| Components: |
| Copper metal powder: | Toxicity to fish | LC50: > 10 - 100 µg/l |
| Application Route: | Skin contact | Exposure time: 96 h |
| Remarks: | Based on data from similar materials | |

Aspiration toxicity
Not classified based on available information.
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according to Regulation (EC) No. 1907/2006

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Date of first issue: 18.05.2015

Calcium oxide:

M-Factor (Chronic aquatic toxicity): 10

Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to microorganisms:
EC50: > 100 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOEC: > 1 mg/l
Exposure time: 14 d
Species: Crangon crangon (shrimp)
Remarks: Based on data from similar materials

Calcium bis(di C8-C10, branched, C9 rich, alkylnaphthalenesulphonate):

Toxicity to fish:
LL50 (Cyprinus carpio (Carp)): > 100 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates:
EL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
EL50 (Pseudokirchneriella subcapitata (green algae)): > 10 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EL10 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction

Toxicity to microorganisms: NOEC: > 100 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
Species: Daphnia magna (Water flea)
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 211

Quartz:
Ecotoxicology Assessment

Acute aquatic toxicity: No toxicity at the limit of solubility

Chronic aquatic toxicity: No toxicity at the limit of solubility

Calcium petroleum sulfonates:

Toxicity to fish:
LL50 (Cyprinodon variegatus (sheepshead minnow)): > 10,000 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
EC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials

Toxicity to microorganisms:
EC50: > 10,000 mg/l
12.2 Persistence and degradability

**Product:**
Biodegradability: Result: Readily biodegradable.
Remarks: Based on data from similar materials

**Components:**

- **Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):**
  Biodegradability: Result: Not readily biodegradable.
  Remarks: Based on data from similar materials

- **Calcium petroleum sulfonates:**
  Biodegradability: Result: Not readily biodegradable.
  Biodegradation: 8.6 %
  Exposure time: 28 d
  Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

**Components:**

- **Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):**
  Partition coefficient: n-octanol/water
  log Pow: > 6.6

- **Calcium petroleum sulfonates:**
  Partition coefficient: n-octanol/water
  log Pow: > 6.65

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product:**
Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

**Contaminated packaging:**
Empty containers should be taken to an approved waste handling site for recycling or disposal.
SECTION 14: Transport information

14.1 UN number

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>ADN</td>
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<tr>
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<td>UN 3077</td>
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<td>RID</td>
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<td>IMDG</td>
<td>UN 3077</td>
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<tr>
<td>IATA</td>
<td>UN 3077</td>
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14.2 UN proper shipping name

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<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)</td>
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<tr>
<td>RID</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)</td>
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<tr>
<td>IMDG</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)</td>
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<tr>
<td>IATA</td>
<td>Environmentally hazardous substance, solid, n.o.s. (Copper metal powder)</td>
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14.3 Transport hazard class(es)

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<tr>
<td>IMDG</td>
<td>9</td>
</tr>
<tr>
<td>IATA</td>
<td>9</td>
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14.4 Packing group

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<td>ADR</td>
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Classification Code : M7
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

RID
Packing group : III
Classification Code : M7
Hazard Identification Number : 90
Labels : 9

IMDG
Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)
Packing instruction (cargo aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous

IATA (Passenger)
Packing instruction (passenger aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous

14.5 Environmental hazards

ADN
Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Remarks : Not applicable for product as supplied.
SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable

REACH - List of substances subject to authorisation (Annex XIV): Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast): Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable


Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

- DSL: All components of this product are on the Canadian DSL
- TSCA: All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
- AICS: All ingredients listed or exempt.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information: Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

- H228: Flammable solid.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H318: Causes serious eye damage.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.
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H350i : May cause cancer by inhalation.
H372 : Causes damage to organs through prolonged or repeated exposure if inhaled.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Carc. : Carcinogenicity
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Flam. Sol. : Flammable solids
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT RE : Specific target organ toxicity - repeated exposure
STOT SE : Specific target organ toxicity - single exposure
2004/37/EC : Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
2004/37/EC / TWA : Long term exposure limit
2017/164/EU / STEL : Short term exposure limit
2017/164/EU / TWA : Limit Value - eight hours
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

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; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European...
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Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information
Sources of key data used to compile the Safety Data Sheet:

Classification of the mixture:

<table>
<thead>
<tr>
<th>Eye Irrit. 2</th>
<th>Skin Sens. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>H319</td>
<td>H317</td>
</tr>
</tbody>
</table>

Classification procedure:
- Based on product data or assessment
- Calculation method

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

GB / EN