SAFETY DATA SHEET

COPR 99

SECTION 1. IDENTIFICATION

Product name : COPR 99
Other means of identification : No data available
SDS-Identcode : 503G

Manufacturer or supplier’s details
Company name of supplier : Bestolife Corporation
Address : 2126 Vanco Drive
Irving TX 75061,
Telephone : 855-243-9164/972-865-8961
Telefax : 214-631-3047
E-mail address : www.bestolife.com

Recommended use of the chemical and restrictions on use
Recommended use : Industrial use
Thread Compound (Pipe Dope) and Jacking grease for use in
Offshore industries
Mining. (without offshore industries)
Restrictions on use : Do not use on oxygen lines or in oxygen enriched atmos-
pheres.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations
Eye irritation : Category 2A
Skin sensitization : Sub-category 1B

GHS label elements
Hazard pictograms : !
Signal Word : Warning
Hazard Statements : H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
Precautionary Statements : Prevention:
P261 Avoid breathing dust, fume, gas, mist, vapors or spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of
the workplace.
P280 Wear protective gloves, eye protection and face protec-
tion.
Response:
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>64742-52-5</td>
<td>&gt;= 30 - &lt; 60 *</td>
</tr>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>&gt;= 10 - &lt; 30 *</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
<td>&gt;= 10 - &lt; 30 *</td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>7440-50-8</td>
<td>&gt;= 5 - &lt; 10 *</td>
</tr>
<tr>
<td>12-Hydroxy lithium stearate</td>
<td>7620-77-1</td>
<td>&gt;= 1 - &lt; 5 *</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>&gt;= 1 - &lt; 5 *</td>
</tr>
<tr>
<td>Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate)</td>
<td>57855-77-3</td>
<td>&gt;= 1 - &lt; 5 *</td>
</tr>
<tr>
<td>Quartz</td>
<td>14808-60-7</td>
<td>&gt;= 1 - &lt; 5 *</td>
</tr>
</tbody>
</table>

* Actual concentration or concentration range is withheld as a trade secret

SECTION 4. 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.

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.

Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.
Causes serious eye irritation.

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).

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : None known.

Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides
Metal oxides
Fluorine compounds
Sulfur oxides

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.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

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.

Methods and materials for containment and 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.
SECTION 7. HANDLING AND STORAGE

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

Advice on safe handling: For outdoor use only
- Do not get on skin or clothing.
- Avoid breathing dust, fume, gas, mist, vapors 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.

Conditions for safe storage: Keep in properly labeled containers.
- Store in accordance with the particular national regulations.

Materials to avoid: Do not store with the following product types:
- Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>64742-52-5</td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL (Mist)</td>
<td>10 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEV (Mist)</td>
<td>10 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Mist)</td>
<td>1 mg/m³</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Inhalable particulate matter)</td>
<td>5 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>TWAEV (respirable dust)</td>
<td>3 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable particulates)</td>
<td>2 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable)</td>
<td>2 mg/m³</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>2 fibres per cubic centimeter</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>2 mg/m³</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Substance</td>
<td>Respirable particulate matter</td>
<td>TWA (Respirable)</td>
<td>OEL</td>
<td>TWA (Respirable dust)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>------------------</td>
<td>--------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Graphite</td>
<td>(Respirable particulate matter)</td>
<td>2 mg/m³</td>
<td>CA BC OEL</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>7782-42-5</td>
<td>TWA (Fumes)</td>
<td>0.2 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td>12-Hydroxy lithium stearate</td>
<td>7620-77-1</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>CA AB OEL</td>
</tr>
</tbody>
</table>
These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Quartz

Engineering measures:

Minimize workplace exposure concentrations. Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m³ - total dust, 5 mg/m³ - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m³ - respirable particles, 10 mg/m³ - inhalable particles.

Personal protective equipment

Respiratory protection:

If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type: Combined particulates and organic vapor type

Hand protection:

Material: Chemical-resistant gloves

Remarks:

Choose gloves to protect hands against chemicals depending on the concentration 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 glove manufacturer. Wash hands before breaks and at the end of workday.

Eye protection:

Wear the following personal protective equipment:

Safety goggles

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).

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.
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance**: Viscous semi-solid
- **Color**: copper, black
- **Odor**: Petroleum
- **Odor 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**: >= 200 °C
  Method: ASTM D 92, Cleveland open cup Distillates (petroleum), hydrotreated heavy naphthenic
- **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
- **Vapor pressure**: Not applicable
- **Relative vapor density**: Not applicable
- **Relative density**: 1.2
- **Solubility(ies)**
  - Water solubility: negligible
- **Partition coefficient: n-octanol/water**: Not applicable
- **Autoignition temperature**: No data available
- **Decomposition temperature**: No data available
- **Viscosity**
  - Viscosity, kinematic: Not applicable
- **Flow time**: No data available
- **Explosive properties**: Not explosive
SECTION 10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: Can react with strong oxidizing agents.
Conditions to avoid: None known.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Skin contact
Ingestion
Eye contact

Acute toxicity
Not classified based on available information.

Components:

**Distillates (petroleum), hydrotreated heavy naphthenic:**
- Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
  Method: OECD Test Guideline 401
  Remarks: Based on data from similar materials
- Acute inhalation toxicity: LC50 (Rat): > 5.53 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
  Method: OECD Test Guideline 403
  Assessment: The substance or mixture has no acute inhalation toxicity
  Remarks: Based on data from similar materials
- Acute dermal toxicity: LD50 (Rabbit): > 5,000 mg/kg
  Method: OECD Test Guideline 402
  Remarks: Based on data from similar materials

**Talc:**
- Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
  Remarks: Based on data from similar materials

**Graphite:**
- Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
  Method: OECD Test Guideline 423
<table>
<thead>
<tr>
<th>Substance</th>
<th>Acute oral toxicity</th>
<th>Acute inhalation toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper metal powder</td>
<td>LD50 (Rat): &gt; 2,500 mg/kg</td>
<td>LC50 (Rat): &gt; 2 mg/l</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 423</td>
<td>Exposure time: 4 h</td>
</tr>
<tr>
<td></td>
<td>Assessment: The substance or mixture has no acute oral toxicity</td>
<td>Test atmosphere: dust/mist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methods: OECD Test Guideline 436</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assessment: The substance or mixture has no acute inhalation toxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remarks: Based on data from similar materials</td>
</tr>
<tr>
<td>12-Hydroxy lithium stearate</td>
<td>LD50 (Rat): &gt; 2,000 mg/kg</td>
<td>(Rat): &gt; 5 mg/l</td>
</tr>
<tr>
<td></td>
<td>Assessment: The substance or mixture has no acute oral toxicity</td>
<td>Exposure time: 4 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Test atmosphere: dust/mist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Method: OECD Test Guideline 436</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assessment: The substance or mixture has no acute dermal toxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remarks: Based on data from similar materials</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>LD50 (Rat): &gt; 2,000 mg/kg</td>
<td>LD50 (Rat): &gt; 5,000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Assessment: The substance or mixture has no acute oral toxicity</td>
<td>Method: OECD Test Guideline 425</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Method: OECD Test Guideline 420</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assessment: The substance or mixture has no acute dermal toxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remarks: Based on data from similar materials</td>
</tr>
<tr>
<td>Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate)</td>
<td>LD50 (Rat): &gt; 5,000 mg/kg</td>
<td>LD50 (Rabbit): &gt; 5,000 mg/kg</td>
</tr>
</tbody>
</table>
### Quartz:
- **Acute oral toxicity**: LD50 (Rat): > 5,000 mg/kg

### Skin corrosion/irritation
Not classified based on available information.

### Components:

#### Distillates (petroleum), hydrotreated heavy naphthenic:
- **Species**: Rabbit
- **Result**: No skin irritation
- **Remarks**: Based on data from similar materials

#### Talc:
- **Species**: Rabbit
- **Result**: No skin irritation

#### Graphite:
- **Species**: Rabbit
- **Method**: OECD Test Guideline 404
- **Result**: No skin irritation

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

#### 12-Hydroxy lithium stearate:
- **Species**: Rabbit
- **Result**: No skin irritation
- **Remarks**: Based on data from similar materials

#### 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

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

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

- **Distillates (petroleum), hydrotreated heavy naphthenic:**
  - Species: Rabbit
  - Result: No eye irritation
  - Remarks: Based on data from similar materials

- **Talc:**
  - Species: Rabbit
  - Result: No eye irritation

- **Graphite:**
  - Species: Rabbit
  - Result: No eye irritation
  - Method: OECD Test Guideline 405

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

- **12-Hydroxy lithium stearate:**
  - Species: Rabbit
  - Result: No eye irritation
  - Remarks: Based on data from similar materials

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

- **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

Respiratory or skin sensitization

Skin sensitization
May cause an allergic skin reaction.

Respiratory sensitization
Not classified based on available information.

Components:

- **Distillates (petroleum), hydrotreated heavy naphthenic:**
  - Test Type: Buehler Test
  - Routes of exposure: Skin contact
  - Species: Guinea pig
  - Result: negative
Remarks: Based on data from similar materials

**Graphite:**
- **Test Type:** Local lymph node assay (LLNA)
- **Routes of exposure:** Skin contact
- **Species:** Mouse
- **Result:** negative

**Copper metal powder:**
- **Test Type:** Maximization Test
- **Routes of exposure:** Skin contact
- **Species:** Guinea pig
- **Method:** OECD Test Guideline 406
- **Result:** negative

**12-Hydroxy lithium stearate:**
- **Test Type:** Local lymph node assay (LLNA)
- **Routes of exposure:** Skin contact
- **Species:** Mouse
- **Method:** OECD Test Guideline 429
- **Result:** negative

**Calcium oxide:**
- **Test Type:** Local lymph node assay (LLNA)
- **Routes of exposure:** 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
- **Routes of exposure:** Skin contact
- **Species:** Guinea pig
- **Result:** positive
- **Remarks:** Based on data from similar materials
- **Assessment:** Probability or evidence of low to moderate skin sensitization rate in humans

**Germ cell mutagenicity**
Not classified based on available information.
Components:

Distillates (petroleum), hydrotreated heavy naphthenic:
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: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

Talc:
Genotoxicity in vitro: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)  
Result: negative

Genotoxicity in vivo:
Species: Rat  
Application Route: Ingestion  
Result: negative

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

Genotoxicity in vitro: Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

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**

<table>
<thead>
<tr>
<th>Test Type:</th>
<th>Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method:</td>
<td>OECD Test Guideline 471</td>
</tr>
<tr>
<td>Result:</td>
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<table>
<thead>
<tr>
<th>Test Type:</th>
<th>Chromosome aberration test in vitro</th>
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<tbody>
<tr>
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<td>OECD Test Guideline 473</td>
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<tr>
<td>Result:</td>
<td>negative</td>
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<tr>
<td>Remarks:</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Type:</th>
<th>In vitro mammalian cell gene mutation test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method:</td>
<td>OECD Test Guideline 476</td>
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<tr>
<td>Result:</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks:</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES)</th>
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</thead>
<tbody>
<tr>
<td>Method:</td>
<td>OECD Test Guideline 471</td>
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<tr>
<td>Result:</td>
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<tr>
<td>Remarks:</td>
<td>Based on data from similar materials</td>
</tr>
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<table>
<thead>
<tr>
<th>Test Type:</th>
<th>In vitro mammalian cell gene mutation test</th>
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<tbody>
<tr>
<td>Method:</td>
<td>OECD Test Guideline 476</td>
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<tr>
<td>Result:</td>
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<td>Remarks:</td>
<td>Based on data from similar materials</td>
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<table>
<thead>
<tr>
<th>Test Type:</th>
<th>Chromosome aberration test in vitro</th>
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<tbody>
<tr>
<td>Method:</td>
<td>OECD Test Guideline 473</td>
</tr>
<tr>
<td>Result:</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks:</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**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:**

**Distillates (petroleum), hydrotreated heavy naphthenic:**

<table>
<thead>
<tr>
<th>Species:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mouse</td>
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<table>
<thead>
<tr>
<th>Application Route:</th>
<th>Skin contact</th>
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</table>

<table>
<thead>
<tr>
<th>Exposure time:</th>
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<table>
<thead>
<tr>
<th>Method:</th>
<th>OECD Test Guideline 451</th>
</tr>
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<tbody>
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<td>Result:</td>
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</table>

**Talc:**

<table>
<thead>
<tr>
<th>Species:</th>
<th>Mouse</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Application Route:</th>
<th>inhalation (dust/mist/fume)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Exposure time:</th>
<th>2 Years</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Result:</th>
<th>negative</th>
</tr>
</thead>
</table>
## Calcium oxide:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>104 weeks</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

## Quartz:

<table>
<thead>
<tr>
<th>Species</th>
<th>Humans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Inhalation (dust/mist/fume)</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
<tr>
<td>Remarks</td>
<td>These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.</td>
</tr>
</tbody>
</table>

## Carcinogenicity - Assessment

Positive evidence from human epidemiological studies (inhalation)

## Reproductive toxicity

Not classified based on available information.

## Components:

### Talc:

**Effects on fetal development**

Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

### Graphite:

**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

**Effects on fetal 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

### 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 fetal development**

Test Type: Embryo-fetal development
Species: Rabbit  
Application Route: Ingestion  
Result: negative  

**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 fetal development: Test Type: Embryo-fetal development  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative

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

**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:**

**12-Hydroxy lithium stearate:**  
Routes of exposure: Ingestion  
Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.
Quartz:
Routes of exposure: 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:

Distillates (petroleum), hydrotreated heavy naphthenic:
Species: Rat
NOAEL: > 0.98 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 28 Days
Remarks: Based on data from similar materials

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

12-Hydroxy lithium stearate:
Species: Rat
NOAEL: > 88 mg/kg
Application Route: Ingestion
Exposure time: 90 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, alkylnaphthalenesulphonate):
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.

Aspiration toxicity
Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish:
- LC50 (Pimephales promelas (fathead minnow)): 1,064,120 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)): 16,410 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 202
- Remarks: Based on data from similar materials

- EC50 (Daphnia magna (Water flea)): 32,820 mg/l
- Exposure time: 48 h
- Method: OECD Test Guideline 202
- Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
- EC50 (Selenastrum capricornutum (green algae)): 110,268 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 201
- Remarks: Based on data from similar materials

- NOEC (Selenastrum capricornutum (green algae)): 100 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 201
- Remarks: Based on data from similar materials

Components:

Distillates (petroleum), hydrotreated heavy naphthenic:

Toxicity to fish:
- LC50 (Pimephales promelas (fathead minnow)): > 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)): > 10,000 mg/l
- Exposure time: 48 h
- Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
- EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
- Exposure time: 72 h
<table>
<thead>
<tr>
<th>Substance</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>OLED Test Guideline 201</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td></td>
<td>NOEC (Daphnia magna (Water flea)): 10 mg/l</td>
<td>Exposure time: 21 d</td>
</tr>
<tr>
<td></td>
<td>NOEC: &gt; 1.93 mg/l</td>
<td>Exposure time: 10 min</td>
</tr>
<tr>
<td></td>
<td>NOELR (Pseudokirchneriella subcapitata (green algae)): &gt; 100 mg/l</td>
<td>Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>NOEC: &gt; 1 - 10 µg/l</td>
<td></td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>OLED Test Guideline 203</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOELR (Pseudokirchneriella subcapitata (green algae)): &gt; 100 mg/l</td>
<td>Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>NOEC: &gt; 1 - 10 µg/l</td>
<td></td>
</tr>
<tr>
<td>12-Hydroxy lithium stearate</td>
<td>OLED Test Guideline 203</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOELR (Pseudokirchneriella subcapitata (green algae)): &gt; 100 mg/l</td>
<td>Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>NOEC: &gt; 1 - 10 µg/l</td>
<td></td>
</tr>
</tbody>
</table>
Toxicity to daphnia and other aquatic invertebrates: EL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

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

Calcium oxide:
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 daphnia and other aquatic invertebrates (Chronic toxicity): NOEC (Crangon crangon (shrimp)): > 1 mg/l
Exposure time: 14 d
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

Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):
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
  Method: OECD Test Guideline 201
  Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
  NOELR (Daphnia magna (Water flea)): 2.2 mg/l
  Exposure time: 21 d
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 211

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

Quartz:

Ecotoxicology Assessment:
  Acute aquatic toxicity: No toxicity at the limit of solubility.
  Chronic aquatic toxicity: No toxicity at the limit of solubility.

Persistence and degradability:

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

Components:

Distillates (petroleum), hydrotreated heavy naphthenic:
  Biodegradability: Result: Not readily biodegradable.
  Biodegradation: 2 - 4 %
  Exposure time: 28 d
  Method: OECD Test Guideline 301B

12-Hydroxy lithium stearate:
  Biodegradability: Result: Readily biodegradable.
  Biodegradation: 78 %
  Exposure time: 28 d
  Method: OECD Test Guideline 301C
Calcium bis(di C8-C10, branched, C9 rich, alkynaphthalenesulphonate):

Biodegradability: Result: Not readily biodegradable.
Remarks: Based on data from similar materials

Bioaccumulative potential

Components:

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

Partition coefficient: n-octanol/water:
log Pow: > 6.6

Mobility in soil:
No data available

Other adverse effects:
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods:
- Waste from residues: Dispose of in accordance with local regulations.
- Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
  Empty containers retain residue and can be dangerous.
  Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.
  If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG:
- UN number: UN 3077
- Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)

- Class: 9
- Packing group: III
- Labels: 9

IATA-DGR:
- UN/ID No.: UN 3077
- Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Copper metal powder)

- Class: 9
- Packing group: III
- Labels: Miscellaneous
- Packing instruction (cargo aircraft): 956
- Packing instruction (passenger aircraft): 956
Environmentally hazardous: yes

**IMDG-Code**

- **UN number**: UN 3077
- **Proper shipping name**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)
- **Class**: 9
- **Packing group**: III
- **Labels**: 9
- **EmS Code**: F-A, S-F
- **Marine pollutant**: yes

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation**

**TDG**

- **UN number**: UN 3077
- **Proper shipping name**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)
- **Class**: 9
- **Packing group**: III
- **Labels**: 9
- **ERG Code**: 171
- **Marine pollutant**: yes (Copper metal powder)

**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.

**SECTION 15. REGULATORY INFORMATION**

The ingredients 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.

**SECTION 16. OTHER INFORMATION**

Full text of other abbreviations

- **ACGIH**: USA. ACGIH Threshold Limit Values (TLV)
- **CA AB OEL**: Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
- **CA BC OEL**: Canada. British Columbia OEL
- **CA ON OEL**: Ontario Table of Occupational Exposure Limits made under
<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIIC</td>
<td>Australian Inventory of Industrial Chemicals</td>
</tr>
<tr>
<td>ANTT</td>
<td>National Agency for Transport by Land of Brazil</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society for the Testing of Materials</td>
</tr>
<tr>
<td>bw</td>
<td>Body weight</td>
</tr>
<tr>
<td>DIN</td>
<td>Standard of the German Institute for Standardisation</td>
</tr>
<tr>
<td>DSL</td>
<td>Domestic Substances List (Canada)</td>
</tr>
<tr>
<td>ECx</td>
<td>Concentration associated with x% response</td>
</tr>
<tr>
<td>ELx</td>
<td>Loading rate associated with x% response</td>
</tr>
<tr>
<td>EmS</td>
<td>Emergency Schedule</td>
</tr>
<tr>
<td>ENCS</td>
<td>Existing and New Chemical Substances (Japan)</td>
</tr>
<tr>
<td>ErCx</td>
<td>Concentration associated with x% growth rate response</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
</tr>
<tr>
<td>GLP</td>
<td>Good Laboratory Practice</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
</tbody>
</table>
| IBC                           | International Code for the Construction and Equipment of Ships carrying Danger-
| IC50                          | Half maximal inhibitory concentration                                        |
| ICAO                          | International Civil Aviation Organization                                    |
| IECSC                         | Inventory of Existing Chemical Substances in China                           |
| IMDG                          | International Maritime Dangerous Goods                                       |
| IMHO                          | International Maritime Organization                                          |
| ISHL                          | Industrial Safety and Health Law (Japan)                                     |
| KEGI                          | Convention for the Prevention of Pollution from Ships                        |
| IC50                          | Half maximal inhibitory concentration                                        |
| IMO                           | International Convention for the Prevention of Pollution from Ships          |
| n.o.s.                        | Not Otherwise Specified                                                      |
| Nch                           | Chilean Norm                                                                 |
| NO(A)EC                       | No Observed (Adverse) Effect Concentration                                   |
| NO(A)EL                       | No Observed (Adverse) Effect Level                                           |
| NOELR                         | No Observable Effect Loading Rate                                            |
| NOM                           | Official Mexican Norm                                                        |
| NTP                           | National Toxicology Program                                                  |
| 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 (Q)SAR                        |
| REACH                         | Regulation (EC) No 1907/2006 of the European Parliament and of the Council con-
| SDS                           | Safety Data Sheet                                                            |
| TCSI                          | Taiwan Chemical Substance Inventory                                          |
| TDG                           | Transport of Dangerous Goods                                                |
| TSCA                          | Toxic Substances Control Act (United States)                                |
| UN                            | United Nations Recommendations on the Transport of Dangerous Goods           |
| vPvB                          | Very Persistent and Very Bioaccumulative                                    |
| WHMIS                         | Workplace Hazardous Materials Information System                             |


Revision Date: 10/20/2020
Date format: mm/dd/yyyy

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.

CA / Z8