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

1.1 Product identifier
   Trade name : COPPER ROCK

   SDS-Identcode : 304G

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; Internl: +1-703-527-3887 NHS Dect: +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.
   Short-term (acute) aquatic hazard, Category 1 : H400: Very toxic to aquatic life.
   Long-term (chronic) aquatic hazard, Category 1 : H410: Very toxic to aquatic life with long lasting effects.

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.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
- P273 Avoid release to the environment.
- 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.
- P391 Collect spillage.

Hazardous components which must be listed on the label:
- 2,5-Bis(octyldithio)-1,3,4-thiadiazole
- Benzenesulphonic acid, propenated, calcium salts, overbased

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.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copper metal powder</td>
<td>7440-50-8</td>
<td>231-159-6</td>
<td>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>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td></td>
<td>Dilithium azelate</td>
<td>38900-29-7</td>
<td>254-184-4</td>
<td></td>
<td>Acute Tox. 4; H302</td>
<td>&gt;= 1 - &lt; 10</td>
</tr>
<tr>
<td></td>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td></td>
<td></td>
<td>Skin Irrit. 2; H315</td>
<td>&gt;= 3 - &lt; 10</td>
</tr>
<tr>
<td>Substance</td>
<td>CAS Number</td>
<td>Hazard Class</td>
<td>M-Factor (Chronic aquatic toxicity):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>------------</td>
<td>--------------</td>
<td>------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isobutylene-butene copolymer</td>
<td>9044-17-1</td>
<td>Eye Dam. 1; H318 STOT SE 3; H335</td>
<td>&gt;= 1 - &lt; 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony</td>
<td>15991-76-1</td>
<td>Acute Tox. 4; H302 Acute Tox. 4; H332 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamate</td>
<td>15890-25-2</td>
<td>Acute Tox. 4; H302 Acute Tox. 4; H332 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartz</td>
<td>14808-60-7</td>
<td>Carc. 1A; H350i STOT RE 1; H372 (Lungs)</td>
<td>&gt;= 1 - &lt; 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,5-Bis(octyldithio)-1,3,4-thiadiazole</td>
<td>13539-13-4</td>
<td>Acute Tox. 4; H332 Skin Irrit. 2; H315 Skin Sens. 1A; H317 Aquatic Chronic 3; H412</td>
<td>&gt;= 0.25 - &lt; 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc dialkyldithiophosphate</td>
<td>69993-19-7</td>
<td>Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 0.1 - &lt; 0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzenesulphonic acid, propenated, calcium salts, over-based</td>
<td>68610-84-4</td>
<td>Skin Sens. 1; H317 Aquatic Chronic 4; H413</td>
<td>&gt;= 0.1 - &lt; 0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

**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

Unsuitable extinguishing media: None known.

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
Nitrogen oxides (NOx)
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/PERSONAL 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

Occupational Exposure Limits

<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>Graphite</td>
<td>7782-42-5</td>
<td>TWA (inhalable dust)</td>
<td>10 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable dust)</td>
<td>4 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>7440-50-8</td>
<td>TWA (Fumes)</td>
<td>0.2 mg/m³ (Copper)</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Dusts and mists)</td>
<td>1 mg/m³ (Copper)</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL (Dusts and mists)</td>
<td>2 mg/m³ (Copper)</td>
<td>GB EH40</td>
</tr>
<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 respirable 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 ‘inhalable’ 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 name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxide</td>
<td></td>
<td></td>
<td>TWA (Inhalable fraction)</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2017/164/EU</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STEL (Respirable fraction)</td>
<td>4 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2017/164/EU</td>
</tr>
<tr>
<td>Tris[bis(2-ethylhexyl)dithiocarbamoato-S,S'] antimony</td>
<td>15991-76-1</td>
<td>TWA (Respirable fraction)</td>
<td>0.5 mg/m³ (antimony)</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamate</td>
<td>15890-25-2</td>
<td>TWA (Respirable dust)</td>
<td>0.1 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2004/37/EC</td>
</tr>
<tr>
<td>Quartz</td>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>0.1 mg/m³ (Silica)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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:**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite</td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>0.3 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>813 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>1.2 mg/m³</td>
</tr>
</tbody>
</table>
### Safely Data Sheet

**Copper Rock**

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>Oral (Secondary Poisoning)</td>
<td>9.33 mg/kg food</td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>Fresh water</td>
<td>7.8 µg/l</td>
</tr>
</tbody>
</table>

**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>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>Oral (Secondary Poisoning)</td>
<td>9.33 mg/kg food</td>
</tr>
<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>--------------</td>
<td>----------</td>
</tr>
<tr>
<td>Sewage treatment plant</td>
<td>230 µg/l</td>
<td></td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>87 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Marine sediment</td>
<td>676 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Soil</td>
<td>65 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Dilithium azelate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh water</td>
<td>0.023 mg/l</td>
<td></td>
</tr>
<tr>
<td>Marine water</td>
<td>0.002 mg/l</td>
<td></td>
</tr>
<tr>
<td>Intermittent use/release</td>
<td>0.23 mg/l</td>
<td></td>
</tr>
<tr>
<td>Calcium oxide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh water</td>
<td>0.37 mg/l</td>
<td></td>
</tr>
<tr>
<td>Marine water</td>
<td>0.24 mg/l</td>
<td></td>
</tr>
<tr>
<td>Intermittent use/release</td>
<td>0.37 mg/l</td>
<td></td>
</tr>
<tr>
<td>Sewage treatment plant</td>
<td>2.27 mg/l</td>
<td></td>
</tr>
<tr>
<td>Soil</td>
<td>817.4 mg/kg dry weight (d.w.)</td>
<td></td>
</tr>
</tbody>
</table>

#### 8.2 Exposure controls

**Engineering measures**
Minimize workplace exposure concentrations.

**Personal protective equipment**

<table>
<thead>
<tr>
<th>Eye protection</th>
<th>Wear the following personal protective equipment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety goggles</td>
<td></td>
</tr>
<tr>
<td>Equipment should conform to BS EN 166</td>
<td></td>
</tr>
</tbody>
</table>

**Hand protection**

<table>
<thead>
<tr>
<th>Material</th>
<th>Chemical-resistant gloves</th>
</tr>
</thead>
</table>

**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 glove manufacturer. Wash hands before breaks and at the end of workday.

**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

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Viscous semi-solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>copper</td>
</tr>
<tr>
<td>Odour</td>
<td>Petroleum</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable (not an aqueous solution)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;= 204 °C</td>
</tr>
<tr>
<td>Method: ASTM D 92, Cleveland open cup</td>
<td></td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not classified as a flammability hazard</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.3</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Water solubility: negligible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Viscosity, dynamic: No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flow time</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
</tbody>
</table>

### 9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
<tr>
<td>Particle size</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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.

Product:
Acute oral toxicity: Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

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

Dilithium azelate:
Acute oral toxicity: LD50 (Rat): > 300 - 2,000 mg/kg
Method: OECD Test Guideline 420
Remarks: Based on data from similar materials

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

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

Isobutylene-butene copolymer:
Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on data from similar materials

Acute inhalation toxicity: LC50 (Rat): > 19.171 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

**Tris[bis(2-ethylhexyl)dithiocarbamato-S,S’] antimony:**

- **Acute oral toxicity**: Acute toxicity estimate: 2,000 mg/kg
  - Method: Expert judgement
  - Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

- **Acute inhalation toxicity**: Acute toxicity estimate: 5 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Method: Expert judgement
  - Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

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

**Antimony, dialkyl dithiocarbamate:**

- **Acute oral toxicity**: Acute toxicity estimate: 2,000 mg/kg
  - Method: Expert judgement
  - Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI
  
  LD50 (Rat): > 5,000 mg/kg

- **Acute inhalation toxicity**: Acute toxicity estimate: 5 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Method: Expert judgement
  - Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

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

**Quartz:**

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

**2,5-Bis(octyldithio)-1,3,4-thiadiazole:**

- **Acute oral toxicity**: LD50 (Rat): > 5,000 mg/kg
  - Method: OECD Test Guideline 401

- **Acute inhalation toxicity**: LC50 (Rat): 3.08 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Method: OECD Test Guideline 403

- **Acute dermal toxicity**: LD50 (Rabbit): > 2,000 mg/kg
  - Method: OECD Test Guideline 402
  - Assessment: The substance or mixture has no acute dermal toxicity
### Zinc dialkyldithiophosphate:
- **Acute oral toxicity**: LD50 (Rat): > 2,000 mg/kg
  - Remarks: Based on data from similar materials
- **Acute dermal toxicity**: LD50 (Rabbit): > 2,000 mg/kg
  - Remarks: Based on data from similar materials

### Benzenesulphonic acid, propenated, calcium salts, overbased:
- **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): > 1.9 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Method: OECD Test Guideline 403
  - 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

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

### Components:

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

#### Dilithium azelate:
- **Species**: reconstructed human epidermis (RhE)
- **Method**: OECD Test Guideline 439
- **Remarks**: Based on data from similar materials
- **Result**: No skin irritation

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

#### 2,5-Bis(octyldithio)-1,3,4-thiadiazole:
- **Species**: Rabbit
- **Method**: OECD Test Guideline 404
- **Result**: Skin irritation
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Zinc dialkyldithiophosphate:
Species : Rabbit
Result : Skin irritation
Remarks : Based on data from similar materials

Benzenesulphonic acid, propenated, calcium salts, overbased:
Species : Rabbit
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

Dilithium azelate:
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

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

2,5-Bis(octyldithio)-1,3,4-thiadiazole:
Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

Zinc dialkyldithiophosphate:
Species : Rabbit
Result : Irreversible effects on the eye
**Remarks**: Based on data from similar materials

**Benzesulphonic acid, propenated, calcium salts, overbased**:

- **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

**Dilithium azelate**:

- **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 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

**2,5-Bis(octyldithio)-1,3,4-thiadiazole**:

- **Test Type**: Buehler Test
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
- **Method**: OECD Test Guideline 406
- **Result**: positive
- **Assessment**: Probability or evidence of high skin sensitisation rate in humans
Zinc dialkyldithiophosphate:
Test Type : Buehler Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

Benzenesulphonic acid, propenated, calcium salts, overbased:
Test Type : Human repeat insult patch test (HRIPT)  
Exposure routes : Skin contact  
Result : positive  
Remarks : Based on data from similar materials

Assessment : Probability or evidence of skin sensitisation 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

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

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 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

Isobutylene-butene copolymer:

Genotoxicity in vitro:
Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo:
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: inhalation (vapour)
Method: OPPTS 870.5395
Result: negative
Remarks: Based on data from similar materials

Antimony, dialkyl dithiocarbamate:

Genotoxicity in vitro:
Test Type: Bacterial reverse mutation assay (AMES)
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: equivocal

2,5-Bis(octyldithio)-1,3,4-thiadiazole:

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

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
Zinc dialkyldithiophosphate:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Benzenesulphonic acid, propenated, calcium salts, overbased:
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

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

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
- **Remarks :** 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

#### Dillithium azelate:
- **Effects on fertility :** Test Type: Reproduction/Developmental toxicity screening test
  - Species: Rat
  - Application Route: Skin contact
  - 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
<table>
<thead>
<tr>
<th>Chemical</th>
<th>Effects on fertility</th>
<th>Test Type</th>
<th>Species</th>
<th>Application Route</th>
<th>Result</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Isobutylene-butene copolymer</td>
<td>Test Type: Reproduction/Developmental toxicity screening test</td>
<td>Species: Rat</td>
<td>Application Route: Ingestion</td>
<td>negative</td>
<td>Based on data from similar materials</td>
<td></td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamate</td>
<td>Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test</td>
<td>Species: Rat</td>
<td>Application Route: Ingestion</td>
<td>negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,5-Bis(octyldithio)-1,3,4-thiadiazole</td>
<td>Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test</td>
<td>Species: Rat</td>
<td>Application Route: Ingestion</td>
<td>negative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Result: negative

Zinc dialkyldithiophosphate:
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

Benzenesulphonic acid, propenated, calcium salts, overbased:
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
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Date of first issue: 19.05.2015

<table>
<thead>
<tr>
<th>Substance</th>
<th>Species</th>
<th>NOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>&gt;= 2 mg/m3</td>
<td>inhalation (dust/mist/fume)</td>
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</tr>
<tr>
<td>Application Route</td>
<td>28 Days</td>
<td></td>
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</tr>
<tr>
<td>Dilithium azelate: Species</td>
<td>Rat</td>
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<td></td>
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<tr>
<td>NOAEL</td>
<td>1,089.75 mg/kg</td>
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<tr>
<td>Application Route</td>
<td>Skin contact</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Exposure time</td>
<td>28 Days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
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<td></td>
</tr>
<tr>
<td>Calcium oxide: Species</td>
<td>Rat</td>
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<td>inhalation (dust/mist/fume)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Exposure time</td>
<td>90 Days</td>
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<td>Method</td>
<td>OECD Test Guideline 413</td>
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<td>Isobutylene-butene copolymer: Species</td>
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<tr>
<td>NOAEL</td>
<td>&gt; 3,000 mg/kg</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
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<tr>
<td>Exposure time</td>
<td>90 Days</td>
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<td>Antimony, dialkyl dithiocarbamate: Species</td>
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</tr>
<tr>
<td>NOAEL</td>
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</tr>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
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<td></td>
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</tr>
<tr>
<td>Exposure time</td>
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<td></td>
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<td>Quartz: Species</td>
<td>Humans</td>
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<td>NOAEL</td>
<td>0.053 mg/m3</td>
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<td>Application Route</td>
<td>inhalation (dust/mist/fume)</td>
<td></td>
<td></td>
<td></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>
<td></td>
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</tr>
<tr>
<td>2,5-Bis(octyldithio)-1,3,4-thiadiazole: Species</td>
<td>Rat</td>
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<tr>
<td>NOAEL</td>
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<td></td>
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<td>Exposure time</td>
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<tr>
<td>Method</td>
<td>OECD Test Guideline 422</td>
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<tr>
<td>Zinc dialkyldithiophosphate: Species</td>
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<tr>
<td>NOAEL</td>
<td>&gt; 150 mg/kg</td>
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<tr>
<td>Application Route</td>
<td>Ingestion</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exposure time: 52 Days
Method: OECD Test Guideline 422
Remarks: Based on data from similar materials

**Benzenesulphonic acid, propenated, calcium salts, overbased:**
Species: Rat
NOAEL: > 300 mg/kg
Application Route: Ingestion
Exposure time: 29 Days
Method: OECD Test Guideline 407
Remarks: Based on data from similar materials

Species: Rat
NOAEL: > 600 mg/kg
Application Route: Skin contact
Exposure time: 28 Days
Method: OECD Test Guideline 410
Remarks: Based on data from similar materials

Aspiration toxicity
Not classified based on available information.

**Components:**

**Isobutylene-butene copolymer:**
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**SECTION 12: Ecological information**

12.1 Toxicity

**Components:**

**Copper metal powder:**
Toxicity to fish: LC50: > 10 - 100 µg/l
Exposure time: 96 h
M-Factor (Acute aquatic toxicity): 10
Toxicity to fish (Chronic toxicity): NOEC: > 1 - 10 µg/l
M-Factor (Chronic aquatic toxicity): 10

**Dilithium azelate:**
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 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 - 100 mg/l
- Exposure time: 48 h
- Method: OECD Test Guideline 202
- Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
- NOEC (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l
- Exposure time: 72 h
- Remarks: Based on data from similar materials

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
- Exposure time: 72 h
- 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 microorganisms:
- EC50: > 100 mg/l
- Exposure time: 3 h
- Method: OECD Test Guideline 209
- Remarks: Based on data from similar materials

Isobutylene-butene copolymer:
Toxicity to fish:
- LC50 (Cyprinus carpio (Carp)): > 1.55 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 203
- Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates:

EC50 (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:

ErC50 (Desmodesmus subspicatus (green algae)): > 19.2 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility
Based on data from similar materials

Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony:

NOEC: 0.02 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

M-Factor (Chronic aquatic toxicity): 1

Ecotoxicology Assessment

Chronic aquatic toxicity: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Antimony, dialkyl dithiocarbamate:

NOEC: 0.02 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity): 1

Ecotoxicology Assessment

Chronic aquatic toxicity: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Quartz:

Ecotoxicology Assessment

Acute aquatic toxicity: No toxicity at the limit of solubility

Chronic aquatic toxicity: No toxicity at the limit of solubility

2,5-Bis(octyldithio)-1,3,4-thiadiazole:

LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
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<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>NOELR</th>
<th>Toxicity to microorganisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>Water Accommodated Fraction</td>
<td>3 h</td>
<td>&gt; 0.01 - 0.1 mg/l</td>
<td>EC50 : &gt; 1,000 mg/l</td>
</tr>
</tbody>
</table>

**Zinc dialkyldithiophosphate:**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>NOEC</th>
<th>Toxicity to algae/aquatic plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>Water Accommodated Fraction</td>
<td>72 h</td>
<td>&gt; 0.01 - 0.1 mg/l</td>
<td>ErC50 : &gt; 0.1 - 1 mg/l</td>
</tr>
</tbody>
</table>

**Toxicity to fish:**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 203</td>
<td>Water Accommodated Fraction</td>
<td>96 h</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Toxicity to algae/aquatic plants:**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>Water Accommodated Fraction</td>
<td>72 h</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Toxicity to fish (Chronic toxicity):**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>Water Accommodated Fraction</td>
<td>14 Weeks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>Water Accommodated Fraction</td>
<td>7 d</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**M-Factor (Acute aquatic toxicity):**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>Water Accommodated Fraction</td>
<td>3 h</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**M-Factor (Chronic aquatic):**

<table>
<thead>
<tr>
<th>Method</th>
<th>Test Substance</th>
<th>Exposure Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>Water Accommodated Fraction</td>
<td>7 d</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>
Benzenesulphonic acid, propenated, calcium salts, overbased:

- **Toxicity to fish**: LL50 (Pimephales promelas (fathead minnow)): > 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
  - Remarks: Based on data from similar materials

- **Toxicity to algae/aquatic plants**: EL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
  - Exposure time: 72 h
  - Test substance: Water Accommodated Fraction
  - Remarks: Based on data from similar materials
  - NOELR (Pseudokirchneriella subcapitata (green algae)): 100 mg/l
  - Exposure time: 72 h
  - Test substance: Water Accommodated Fraction
  - Remarks: Based on data from similar materials

- **Toxicity to microorganisms**: EC50: > 100 mg/l
  - Exposure time: 8 h
  - Method: OECD Test Guideline 209
  - Remarks: Based on data from similar materials

12.2 Persistence and degradability

**Components:**

- **Dilithium azelate**:
  - Biodegradability: Result: Readily biodegradable.
  - Biodegradation: 83 %
  - Exposure time: 30 d
  - Method: OECD Test Guideline 301D
  - Remarks: Based on data from similar materials

- **Isobutylene-butene copolymer**:
  - Biodegradability: Result: Readily biodegradable.
  - Biodegradation: 93.9 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 310
  - Remarks: Based on data from similar materials

- **Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony**:
  - Biodegradability: Result: Not readily biodegradable.
  - Remarks: Based on data from similar materials
Antimony, dialkyl dithiocarbamate:
Biodegradability: Result: Not readily biodegradable.
Biodegradation: 20 %
Exposure time: 28 d

2,5-Bis(octyldithio)-1,3,4-thiadiazole:
Biodegradability: Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Benzenesulfonic acid, propenated, calcium salts, overbased:
Biodegradability: Result: Not readily biodegradable.
Method: OECD Test Guideline 301D
Remarks: Based on data from similar materials

12.3 Bioaccumulative potential

Components:

Dilithium azelate:
Partition coefficient: n-octanol/water: log Pow: -3.53

Isobutylene-butene copolymer:
Partition coefficient: n-octanol/water: Pow: > 4
Remarks: Based on data from similar materials

2,5-Bis(octyldithio)-1,3,4-thiadiazole:
Partition coefficient: n-octanol/water: log Pow: > 6.5
Method: OECD Test Guideline 117

Zinc dialkyldithiophosphate:
Partition coefficient: n-octanol/water: log Pow: > 4
Remarks: Calculation

Benzenesulfonic acid, propenated, calcium salts, overbased:
Partition coefficient: n-octanol/water: log Pow: > 4
Remarks: Expert judgement

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. 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

14.1 UN number

<table>
<thead>
<tr>
<th>ADN</th>
<th>UN 3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>UN 3077</td>
</tr>
<tr>
<td>RID</td>
<td>UN 3077</td>
</tr>
<tr>
<td>IMDG</td>
<td>UN 3077</td>
</tr>
<tr>
<td>IATA</td>
<td>UN 3077</td>
</tr>
</tbody>
</table>

14.2 UN proper shipping name

<table>
<thead>
<tr>
<th>ADN</th>
<th>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder, Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder, Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony)</td>
</tr>
<tr>
<td>RID</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder, Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony)</td>
</tr>
<tr>
<td>IMDG</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder, Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony)</td>
</tr>
<tr>
<td>IATA</td>
<td>Environmentally hazardous substance, solid, n.o.s. (Copper metal powder, Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony)</td>
</tr>
</tbody>
</table>

14.3 Transport hazard class(es)
COPPER ROCK

14.4 Packing group

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

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

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

IMDG
Packing group : III
Labels : 9

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
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

<table>
<thead>
<tr>
<th>E1</th>
<th>ENVIRONMENTAL HAZARDS</th>
<th>Quantity 1</th>
<th>Quantity 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>100 t</td>
<td>200 t</td>
</tr>
</tbody>
</table>

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.
H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H322: Harmful if inhaled.
H335: May cause respiratory irritation.
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.
H412: Harmful to aquatic life with long lasting effects.
H413: May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations
Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Aquatic Chronic: Long-term (chronic) aquatic hazard
Asp. Tox.: Aspiration hazard
Carc.: Carcinogenicity
Eye Dam.: Serious eye damage
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)
Further information

Classification of the mixture:

- **Eye Irrit. 2**
  - H319
  - Based on product data or assessment

- **Skin Sens. 1**
  - H317
  - Calculation method

- **Aquatic Acute 1**
  - H400
  - Calculation method

- **Aquatic Chronic 1**
  - H410
  - 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