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

1.1 Product identifier

Trade name : COPPER SUPREME SPECIAL BLEND®

SDS-Identcode : 343G

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; Intertnl: +1-703-527-3887 NHS Drct: +44 0845 4647 (Medical only)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2 : H319: Causes serious eye irritation.

Skin sensitisation, Category 1 : H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms : ![Warning]

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

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

Hazardous components which must be listed on the label:
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>Registration number</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.; H228 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>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></td>
<td>&gt;= 1 - &lt; 10</td>
</tr>
<tr>
<td></td>
<td>Tris[bis(2-ethylhexyl)dithiocarbamato-S,S’] antimony</td>
<td>15991-76-1</td>
<td>240-130-7</td>
<td>051-003-00-9</td>
<td>Acute Tox. 4; H302 Acute Tox. 4; H332 Aquatic Chronic 1; H410</td>
<td></td>
<td>&gt;= 1 - &lt; 2.5</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

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

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

If inhaled: If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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

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

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

4.3 Indication of any immediate medical attention and special treatment needed
Treatment: Treat symptomatically and supportively.

SECTION 5: Firefighting measures

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

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.
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

<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</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 chloride 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 breath-
ing 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.

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

<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></td>
<td></td>
<td>TWA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15991-76-1</td>
<td>TWA</td>
<td>0.5 mg/m³ (antimony) GB EH40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2017/164/EU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Further information: Indicative</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>STEL (Respirable fraction)</td>
<td>4 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2017/164/EU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Further information: Indicative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>1 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GB EH40</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL (Respirable fraction)</td>
<td>4 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GB EH40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamate</td>
<td>TWA</td>
<td>0.5 mg/m³ (antimony) GB EH40</td>
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<tr>
<td>15890-25-2</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GB EH40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartz</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14808-60-7</td>
<td>TWA (Respirable dust)</td>
<td>0.1 mg/m³</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2004/37/EC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Further information: Carcinogens or mutagens</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>0.1 mg/m³ (Silica)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GB EH40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Further information: Capable of causing cancer and/or heritable genetic damage</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 bw/day</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>1.2 mg/m³</td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>20 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>137 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
<td>237 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Acute systemic effects</td>
<td>20 mg/m³</td>
</tr>
</tbody>
</table>
### Effects

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumers</strong></td>
<td><strong>Skin contact</strong></td>
<td><strong>Long-term local effects</strong></td>
<td>137 mg/kg bw/day</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td><strong>Acute systemic effects</strong></td>
<td>273 mg/kg bw/day</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
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<td><strong>Long-term systemic effects</strong></td>
<td>13.5 mg/kg bw/day</td>
</tr>
<tr>
<td>Dilithium azelate</td>
<td><strong>Skin contact</strong></td>
<td><strong>Acute systemic effects</strong></td>
<td>13.5 mg/kg bw/day</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td></td>
<td><strong>Long-term systemic effects</strong></td>
<td>13.5 mg/kg bw/day</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td><strong>Acute local effects</strong></td>
<td>4 mg/m3</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td></td>
<td><strong>Long-term systemic effects</strong></td>
<td>1.54 mg/kg</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td><strong>Inhalation</strong></td>
<td><strong>Long-term local effects</strong></td>
<td>1 mg/m3</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td></td>
<td><strong>Acute local effects</strong></td>
<td>4 mg/m3</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td><strong>Long-term local effects</strong></td>
<td>1 mg/m3</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td></td>
<td><strong>Acute local effects</strong></td>
<td>4 mg/m3</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td></td>
<td><strong>Long-term systemic effects</strong></td>
<td>0.55 mg/kg</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td></td>
<td><strong>Long-term systemic effects</strong></td>
<td>0.55 mg/kg</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td></td>
<td><strong>Acute systemic effects</strong></td>
<td>27 mg/kg</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td></td>
<td><strong>Long-term systemic effects</strong></td>
<td>5.43 mg/m3</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td><strong>Long-term local effects</strong></td>
<td>1.54 mg/kg</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td></td>
<td><strong>Long-term systemic effects</strong></td>
<td>0.957 mg/m3</td>
</tr>
<tr>
<td><strong>Consumers</strong></td>
<td></td>
<td><strong>Long-term systemic effects</strong></td>
<td>0.55 mg/kg</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>Sewage treatment plant</td>
<td>230 µg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>87 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>676 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>65 mg/kg</td>
</tr>
<tr>
<td>Dilithium azelate</td>
<td>Fresh water</td>
<td>0.023 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.002 mg/l</td>
</tr>
<tr>
<td>2,5-Bis(octyldithio)-1,3,4-thiadiazole</td>
<td>Fresh water</td>
<td>0.023 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.002 mg/l</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Engineering measures
Minimize workplace exposure concentrations.

Personal protective equipment

Eye protection: Wear the following personal protective equipment:
Safety goggles
Equipment should conform to BS EN 166

Hand protection

Material: Chemical-resistant gloves

Remarks: Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the 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

Appearance: Viscous semi-solid
Colour: dark, copper
Odour: Petroleum
Odour Threshold: No data available

pH: Not applicable (not an aqueous solution)

Melting point/freezing point: No data available

Initial boiling point and boiling range: No data available
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

COPPER SUPREME SPECIAL BLEND®

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

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Relative density : 1.2

Solubility(ies)
Water solubility : negligible
Partition coefficient: n-octanol/water : Not applicable
Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, kinematic : Not applicable

Flow time : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information

Molecular weight : No data available

Particle size : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Not classified as a reactivity hazard.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions : Can react with strong oxidizing agents.
10.4 Conditions to avoid

Conditions to avoid: None known.

10.5 Incompatible materials

Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure:
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
Not classified based on available information.

Product:
- Acute oral toxicity: Acute toxicity estimate: > 5,000 mg/kg
  Method: Calculation method
  Remarks: Based on data from similar materials

- 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

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

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

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

#### 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

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.

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

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

Benzenesulphonic 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
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according to Regulation (EC) No. 1907/2006

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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

Antimony, dialkyl dithiocarbamate:
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: 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
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Application Route: Ingestion
Exposure time: 104 weeks
Result: negative
Remarks: Based on data from similar materials

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

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

Reproductive toxicity
Not classified based on available information.

Components:

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

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rabbit
Application Route: Ingestion
Result: negative

Dilithium 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

Effects on foetal development: 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
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development:
- Test Type: Embryo-foetal development
- Species: Mouse
- Application Route: Ingestion
- Method: OECD Test Guideline 414
- Result: negative

Antimony, dialkyl dithiocarbamate:
- 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 414
  - Result: negative

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

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

2,5-Bis(octyldithio)-1,3,4-thiadiazole:
- 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
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according to Regulation (EC) No. 1907/2006

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Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

Benzenesulphonic acid, propenated, calcium salts, overbased:

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

STOT - single exposure  
Not classified based on available information.

Components:

Calcium oxide:

Assessment: May cause respiratory irritation.

STOT - repeated exposure  
Not classified based on available information.

Components:

Quartz:

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

Repeated dose toxicity

Components:

Copper metal powder:

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

Dilithium azelate:

Species: Rat  
NOAEL: 1,089.75 mg/kg  
Application Route: Skin contact  
Exposure time: 28 Days  
Remarks: Based on data from similar materials

Calcium oxide:

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

Antimony, dialkyl dithiocarbamate:
Species: Rat
NOAEL: >= 1,000 mg/kg
Application Route: Ingestion
Exposure time: 54 Days

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.

2,5-Bis(octyldithio)-1,3,4-thiadiazole:
Species: Rat
NOAEL: 330 mg/kg
Application Route: Ingestion
Exposure time: 54 Days
Method: OECD Test Guideline 422

Zinc dialkyldithiophosphate:
Species: Rat
NOAEL: > 150 mg/kg
Application Route: Ingestion
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.

SECTION 12: Ecological information

12.1 Toxicity

**Product:**

Toxicity to fish:
- LC50 (Pimephales promelas (fathead minnow)): 10,250 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)): 15,470 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 202
- Remarks: Based on data from similar materials

- EC50 (Daphnia magna (Water flea)): 30,940 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)): 70,100 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 201
- Remarks: Based on data from similar materials

- NOEC (Selenastrum capricornutum (green algae)): 60,000 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 201
- Remarks: Based on data from similar materials

**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

**Dilithium azelate:**

Toxicity to fish:
- LC50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 100 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 203
### 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

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

**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

### Ecotoxicology Assessment

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

### Calcium oxide

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

**EC50 (Daphnia magna (Water flea))**: > 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

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

**EC10 (Pseudokirchneriella subcapitata (green algae))**: > 1 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials
Toxicity to microorganisms: EC50: > 100 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

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

Antimony, dialkyldithiocarbamate:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
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:
Toxicity to fish: LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:
EL50 (Daphnia magna (Water flea)): 45 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants:
LL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
**Toxicity to microorganisms**

<table>
<thead>
<tr>
<th>Method</th>
<th>EC50</th>
<th>Exposure time</th>
<th>Test substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>&gt; 1,000 mg/l</td>
<td>3 h</td>
<td>Water Accommodated Fraction</td>
</tr>
</tbody>
</table>

**Toxicity to fish**

<table>
<thead>
<tr>
<th>Method</th>
<th>LC50</th>
<th>Exposure time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>&gt; 0.1 - 1 mg/l</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>ErC50</th>
<th>Exposure time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>&gt; 0.1 - 1 mg/l</td>
<td>72 h</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Zinc dialkylthiophosphate**

**Toxicity to fish**

<table>
<thead>
<tr>
<th>Method</th>
<th>LC50</th>
<th>Exposure time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>&gt; 0.1 - 1 mg/l</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>ErC50</th>
<th>Exposure time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>&gt; 0.1 - 0.1 mg/l</td>
<td>72 h</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

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

|                             | 1     |

**Toxicity to fish (Chronic toxicity)**

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>&gt; 0.1 - 1 mg/l</td>
<td>14 Weeks</td>
<td>Jordanella floridæ (flagfish)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Method</th>
<th>NOEC</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>&gt; 0.1 - 1 mg/l</td>
<td>7 d</td>
<td>Ceriodaphnia dubia (water flea)</td>
</tr>
</tbody>
</table>

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

|                             | 1     |

**Benzenesulphonic acid, propenated, calcium salts, overbased**

**Toxicity to fish**

<table>
<thead>
<tr>
<th>Method</th>
<th>LL50</th>
<th>Exposure time</th>
<th>Test substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 203</td>
<td>&gt; 100 mg/l</td>
<td>96 h</td>
<td>Water Accommodated Fraction</td>
</tr>
</tbody>
</table>

**Toxicity to daphnia and other aquatic invertebrates**

<table>
<thead>
<tr>
<th>Method</th>
<th>EL50</th>
<th>Exposure time</th>
<th>Test substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 203</td>
<td>&gt; 100 mg/l</td>
<td>48 h</td>
<td>Water Accommodated Fraction</td>
</tr>
</tbody>
</table>

**Toxicity to algae/aquatic plants**

<table>
<thead>
<tr>
<th>Method</th>
<th>EL50</th>
<th>Exposure time</th>
<th>Test substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 203</td>
<td>&gt; 100 mg/l</td>
<td>72 h</td>
<td>Water Accommodated Fraction</td>
</tr>
</tbody>
</table>
### Toxicity to microorganisms

<table>
<thead>
<tr>
<th>Test substance</th>
<th>Toxicity</th>
<th>EC50</th>
<th>Exposure time</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Accommodated Fraction</td>
<td>EC50</td>
<td>&gt; 100 mg/l</td>
<td>8 h</td>
<td>OECD Test Guideline 209</td>
</tr>
</tbody>
</table>

### 12.2 Persistence and degradability

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

#### Components:

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

##### Tris[bis(2-ethylhexyl)dithiocarbamato-S,S’] antimony:
- Biodegradability: Not readily biodegradable.
- Remarks: Based on data from similar materials

##### Antimony, dialkyl dithiocarbamate:
- Biodegradability: Not readily biodegradable.
- Biodegradation: 20 %
- Exposure time: 28 d

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

##### Benzenesulphonic acid, propenated, calcium salts, overbased:
- Biodegradability: 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

- **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

- **Benzenesulphonic 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. 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. |
| Contaminated packaging | |
| ADN | UN 3077 |
| ADR | UN 3077 |

SECTION 14: Transport information

14.1 UN number

| ADN | UN 3077 |
| ADR | UN 3077 |
RID : UN 3077
IMDG : UN 3077
IATA : UN 3077

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
      (Copper metal powder, Antimony, dialkyl dithiocarbamate)
ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
      (Copper metal powder, Antimony, dialkyl dithiocarbamate)
RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
      (Copper metal powder, Antimony, dialkyl dithiocarbamate)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
       (Copper metal powder, Antimony, dialkyl dithiocarbamate)
IATA : Environmentally hazardous substance, solid, n.o.s.
       (Copper metal powder, Antimony, dialkyl dithiocarbamate)

14.3 Transport hazard class(es)

ADN : 9
ADR : 9
RID : 9
IMDG : 9
IATA : 9

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
Tunnel restriction code : (-)

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

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

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

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

14.5 Environmental hazards

ADN
Environmentally hazardous: yes

ADR
Environmentally hazardous: yes

RID
Environmentally hazardous: yes

IMDG
Marine pollutant: yes

IATA (Passenger)
Environmentally hazardous: yes

IATA (Cargo)
Environmentally hazardous: yes

14.6 Special precautions for user

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

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

Remarks: Not applicable for product as supplied.

SECTION 15: Regulatory information

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

- REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Not applicable
- REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable
- REACH - List of substances subject to authorisation (Annex XIV): Not applicable
- Regulation (EC) No 1005/2009 on substances that de-
complete the ozone layer
Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable
Not applicable

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

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

 DSL : All components of this product are on the Canadian DSL

 TSCA : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

 AICS : All ingredients listed or exempt.

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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

Full text of H-Statements

H228 : Flammable solid.
H302 : Harmful if swallowed.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H320 : Harmful if inhaled.
H350i : May cause cancer by inhalation.
H332 : May cause respiratory irritation.
H335 : 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
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<table>
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<tr>
<th>Carc.</th>
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<tr>
<td>Eye Dam.</td>
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<tr>
<td>Flam. Sol.</td>
<td>Flammable solids</td>
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<tr>
<td>Skin Irrit.</td>
<td>Skin irritation</td>
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<tr>
<td>Skin Sens.</td>
<td>Skin sensitisation</td>
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<tr>
<td>STOT RE</td>
<td>Specific target organ toxicity - repeated exposure</td>
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<td>STOT SE</td>
<td>Specific target organ toxicity - single exposure</td>
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<td>Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work</td>
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<td>UK. EH40 WEL - Workplace Exposure Limit</td>
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<tr>
<td>2004/37/EC / TWA</td>
<td>Long term exposure limit</td>
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<tr>
<td>2017/164/EU / STEL</td>
<td>Short term exposure limit</td>
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<tr>
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<tr>
<td>GB EH40 / STEL</td>
<td>Short-term exposure limit (15-minute reference period)</td>
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</table>

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

Further information
Sources of key data used to compile the Safety Data: Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-
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Classification of the mixture:

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<th>Classification procedure:</th>
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<tr>
<td>Calculation method</td>
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<table>
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<td>Skin Sens. 1</td>
<td>H317</td>
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</tbody>
</table>

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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