SECTION 1. IDENTIFICATION

Product name: COPPER SUPREME SPECIAL BLEND®
SDS-Identcode: 343G

Manufacturer or supplier's details
Company name of supplier: Bestolife Corporation
Address: 2126 Vanco Drive, Irving TX 75061,
Telephone: 855-243-9164/972-865-8961
Telefax: 214-631-3047
Emergency telephone: CHEMTREC U.S.: 800-424-9300, International 703-527-3887 (24-hours/7 days)
E-mail address: www.bestolife.com

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

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Eye irritation: Category 2A
Skin sensitization: Category 1

GHS label elements
Hazard pictograms: !

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

Precautionary Statements: Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.

Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Components</strong></td>
<td></td>
</tr>
<tr>
<td>Chemical name</td>
<td>CAS-No.</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>64742-54-7</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>64742-52-5</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>7440-50-8</td>
</tr>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
</tr>
<tr>
<td>Dilithium azelate</td>
<td>38900-29-7</td>
</tr>
<tr>
<td>Dolomite</td>
<td>16389-88-1</td>
</tr>
<tr>
<td>Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony</td>
<td>15991-76-1</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>1305-78-8</td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamate</td>
<td>15890-25-2</td>
</tr>
<tr>
<td>Quartz</td>
<td>14808-60-7</td>
</tr>
<tr>
<td>2,5-Bis(octyldithio)-1,3,4-thiadiazole</td>
<td>13539-13-4</td>
</tr>
<tr>
<td>Benzenesulphonic acid, propenated, calcium salts, overbased</td>
<td>68610-84-4</td>
</tr>
<tr>
<td>Actual concentration is withheld as a trade secret</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

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

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

In case of skin contact : In case of contact, immediately flush skin with plenty of water.
Remove contaminated clothing and shoes.
## SECTION 5. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Water spray</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alcohol-resistant foam</td>
</tr>
<tr>
<td></td>
<td>Carbon dioxide (CO2)</td>
</tr>
<tr>
<td></td>
<td>Dry chemical</td>
</tr>
</tbody>
</table>

### Unsuitable extinguishing media

None known.

### Specific hazards during firefighting

Exposure to combustion products may be a hazard to health.

### Hazardous combustion products

- Carbon oxides
- Metal oxides
- Nitrogen oxides (NOx)
- Sulfur oxides

### Specific extinguishing methods

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Use water spray to cool unopened containers.
- Remove undamaged containers from fire area if it is safe to do so.
- Evacuate area.

### Special protective equipment for fire-fighters

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

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

### Environmental precautions

Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

### Methods and materials for

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

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Advice on safe handling : Do not get on skin or clothing. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers. Store in accordance with the particular national regulations.
Materials to avoid : Do not store with the following product types: Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>64742-54-7</td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST (Mist)</td>
<td>10 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>64742-52-5</td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Inhalable particulate matter)</td>
<td>5 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST (Mist)</td>
<td>10 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
<td>TWA (Respirable)</td>
<td>2.5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable particulate matter)</td>
<td>2 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Dust)</td>
<td>15 Million particles per cubic foot</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>7440-50-8</td>
<td>TWA (Dust)</td>
<td>1 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Substance</td>
<td>Concentration</td>
<td>Source</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
<td>--------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Copper (Fumes)</td>
<td>0.2 mg/m³</td>
<td>ACGIH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper (Dust)</td>
<td>1 mg/m³</td>
<td>NIOSH REL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper (Mist)</td>
<td>1 mg/m³</td>
<td>NIOSH REL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper (dusts and mists)</td>
<td>1 mg/m³</td>
<td>OSHA Z-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper (Fumes)</td>
<td>0.1 mg/m³</td>
<td>OSHA Z-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talc (Dust)</td>
<td>20 Million particles per cubic foot</td>
<td>OSHA Z-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dust</td>
<td>2 mg/m³</td>
<td>NIOSH REL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talc (Respirable particulate matter)</td>
<td>2 mg/m³</td>
<td>ACGIH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolomite</td>
<td>5 mg/m³</td>
<td>NIOSH REL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>2 mg/m³</td>
<td>ACGIH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamato-S,S’ antimony</td>
<td>0.5 mg/m³</td>
<td>OSHA Z-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>5 mg/m³</td>
<td>NIOSH REL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamate</td>
<td>0.5 mg/m³</td>
<td>ACGIH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartz</td>
<td>0.05 mg/m³</td>
<td>NIOSH REL</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mg/m³ / %SiO2+2</td>
<td>OSHA Z-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 mppcf / %SiO2+5</td>
<td>OSHA Z-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.025 mg/m³ (Silica)</td>
<td>ACGIH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.05 mg/m³ (Silica)</td>
<td>NIOSH REL</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

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

Personal protective equipment

Respiratory protection
General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection
Material: Chemical-resistant gloves
Remarks: Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Eye protection
Wear the following personal protective equipment: Safety goggles

Skin and body protection
Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures
If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.
SAFETY DATA SHEET
COPPER SUPREME SPECIAL BLEND®

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Viscous semi-solid
Color : dark, copper
Odor : Petroleum
Odor Threshold : No data available
pH : Not applicable (not an aqueous solution)
Melting point/freezing point : No data available
Initial boiling point and boiling range : No data available
Flash point : >= 392 °F / >= 200 °C
   Method: ASTM D 92, Cleveland open cup
   Distillates (petroleum), hydrotreated heavy naphthenic
Evaporation rate : Not applicable
Flammability (solid, gas) : Not classified as a flammability hazard
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapor pressure : Not applicable
Relative vapor density : Not applicable
Relative density : 1.2
Solubility(ies)
   Water solubility : negligible
Partition coefficient: n-octanol/water : Not applicable
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
   Viscosity, kinematic : Not applicable
Flow time : No data available
Explosive properties : Not explosive
Oxidizing properties: The substance or mixture is not classified as oxidizing.
Molecular weight: No data available
Particle size: No data available

SECTION 10. STABILITY AND REACTIVITY

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

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Skin contact
Ingestion
Eye contact

Acute toxicity
Not classified based on available information.

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

Components:
Distillates (petroleum), hydrotreated heavy paraffinic:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
   Method: OECD Test Guideline 401
   Remarks: Based on data from similar materials

Acute inhalation toxicity: LC50 (Rat): > 5.53 mg/l
   Exposure time: 4 h
   Test atmosphere: dust/mist
   Method: OECD Test Guideline 403
   Assessment: The substance or mixture has no acute inhalation toxicity
   Remarks: Based on data from similar materials

Acute dermal toxicity: LD50 (Rabbit): > 5,000 mg/kg
   Method: OECD Test Guideline 402
   Remarks: Based on data from similar materials
### Distillates (petroleum), hydrotreated heavy naphthenic:

**Acute oral toxicity**: LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Remarks: Based on data from similar materials

**Acute inhalation toxicity**: LC50 (Rat): > 5.53 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

**Acute dermal toxicity**: LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Based on data from similar materials

### Graphite:

**Acute oral toxicity**: LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 423  
Assessment: The substance or mixture has no acute oral toxicity

**Acute inhalation toxicity**: LC50 (Rat): > 2 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

### 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

### Talc:

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

### Dilithium azelate:

**Acute oral toxicity**: LD50 (Rat): > 300 - 2,000 mg/kg
Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

Dolomite:

Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on data from similar materials

Acute inhalation toxicity: LC50 (Rat): > 3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
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: LD50 (Rat): > 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: LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity: LD50 (Rabbit): > 5,000 mg/kg

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

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

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 (Rat): > 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:
Distillates (petroleum), hydrotreated heavy paraffinic:
Species: Rabbit
Result: No skin irritation
Remarks: Based on data from similar materials

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

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

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

Talc:
Species: Rabbit
Result: No skin irritation

Dilithium azelate:
Method: OECD Test Guideline 439
Result: No skin irritation
Remarks: Based on data from similar materials

Dolomite:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
Remarks: Based on data from similar materials

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

2,5-Bis(octyldithio)-1,3,4-thiadiazole:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

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:
Distillates (petroleum), hydrotreated heavy paraffinic:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405
Remarks : Based on data from similar materials

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

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

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

Talc:
Species : Rabbit  
Result : No eye irritation

Dilithium azelate:
Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

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

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

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

Benzenesulphonic acid, propenated, calcium salts, overbased:
Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on data from similar materials
Respiratory or skin sensitization

Skin sensitization
May cause an allergic skin reaction.

Respiratory sensitization
Not classified based on available information.

Components:

<table>
<thead>
<tr>
<th>Distillates (petroleum), hydrotreated heavy paraffinic:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Buehler Test</td>
</tr>
<tr>
<td>Routes of exposure: Skin contact</td>
</tr>
<tr>
<td>Species: Guinea pig</td>
</tr>
<tr>
<td>Method: OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
<tr>
<td>Remarks: Based on data from similar materials</td>
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</tbody>
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<thead>
<tr>
<th>Distillates (petroleum), hydrotreated heavy naphthenic:</th>
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</thead>
<tbody>
<tr>
<td>Test Type: Buehler Test</td>
</tr>
<tr>
<td>Routes of exposure: Skin contact</td>
</tr>
<tr>
<td>Species: Guinea pig</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
<tr>
<td>Remarks: Based on data from similar materials</td>
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<table>
<thead>
<tr>
<th>Graphite:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Local lymph node assay (LLNA)</td>
</tr>
<tr>
<td>Routes of exposure: Skin contact</td>
</tr>
<tr>
<td>Species: Mouse</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Copper metal powder:</th>
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</thead>
<tbody>
<tr>
<td>Test Type: Maximization Test</td>
</tr>
<tr>
<td>Routes of exposure: Skin contact</td>
</tr>
<tr>
<td>Species: Guinea pig</td>
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<tr>
<td>Method: OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Talc:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure: Skin contact</td>
</tr>
<tr>
<td>Species: Humans</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dilithium azelate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Local lymph node assay (LLNA)</td>
</tr>
<tr>
<td>Routes of exposure: Skin contact</td>
</tr>
<tr>
<td>Species: Mouse</td>
</tr>
<tr>
<td>Method: OECD Test Guideline 429</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
<tr>
<td>Remarks: Based on data from similar materials</td>
</tr>
</tbody>
</table>
### Dolomite:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Local lymph node assay (LLNA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 429</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

### Calcium oxide:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Local lymph node assay (LLNA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 429</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Buehler Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
</tbody>
</table>

#### Assessment

Probability or evidence of high skin sensitization rate in humans

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

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Human repeat insult patch test (HRIPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

#### Assessment

Probability or evidence of skin sensitization in humans

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Distillates (petroleum), hydrotreated heavy paraffinic:

**Genotoxicity in vitro**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD Test Guideline 471</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

**Genotoxicity in vivo**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Mammalian erythrocyte micronucleus test (in vivo cytotgenetic assay)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Application Route</td>
<td>Intraperitoneal injection</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 474</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td>Material/Compound</td>
<td>Genotoxicity in vitro</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphite</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Talc</td>
<td>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Dilithium azelate</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td>Substance</td>
<td>Genotoxicity in vitro</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Dolomite</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: Chromosome aberration test in vitro</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 473</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on data from similar materials</td>
</tr>
<tr>
<td></td>
<td>Test Type: In vitro mammalian cell gene mutation test</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 476</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on data from similar materials</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: Chromosome aberration test in vitro</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 473</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on data from similar materials</td>
</tr>
<tr>
<td>Antimony, dialkyl dithiocarbamate</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)</td>
</tr>
<tr>
<td></td>
<td>Species: Mouse</td>
</tr>
<tr>
<td></td>
<td>Application Route: Intraperitoneal injection</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 474</td>
</tr>
<tr>
<td></td>
<td>Result: equivocal</td>
</tr>
<tr>
<td>2,5-Bis(octyldithio)-1,3,4-thiadiazole</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: In vitro mammalian cell gene mutation test</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 476</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>
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

**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:**

**Distillates (petroleum), hydrotreated heavy paraffinic:**
- Species: Mouse
- Application Route: Skin contact
- Exposure time: 78 weeks
- Method: OECD Test Guideline 451
- Result: negative
- Remarks: Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**
- Species: Mouse
- Application Route: Skin contact
<table>
<thead>
<tr>
<th>Component</th>
<th>Species</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>Mouse</td>
<td>inhalation (dust/mist/fume)</td>
<td>2 Years</td>
<td>negative</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>Rat</td>
<td>Ingestion</td>
<td>104 weeks</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Quartz</td>
<td>Humans</td>
<td>inhalation (dust/mist/fume)</td>
<td></td>
<td>positive</td>
<td>These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.</td>
</tr>
</tbody>
</table>

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

IARC
- Quartz (Silica dust, crystalline) 14808-60-7

OSHA
- OSHA specifically regulated carcinogen
  - Quartz (crystalline silica) 14808-60-7

NTP
- Known to be human carcinogen
  - Quartz (Silica, Crystalline (Respirable Size)) 14808-60-7

Reproductive toxicity
Not classified based on available information.

**Components:**

Distillates (petroleum), hydrotreated heavy paraffinic:
Effects on fertility: Test Type: Reproduction/Developmental toxicity screening test
- Species: Rat
- Application Route: Ingestion
- Result: negative
- Remarks: Based on data from similar materials
Effects on fetal development:

**Graphite:**
- Test Type: Embryo-fetal development
- Species: Rat
- Application Route: Skin contact
- Method: OECD Test Guideline 414
- Result: negative
- Remarks: Based on data from similar materials

**Copper metal powder:**
- Test Type: Embryo-fetal development
- Species: Rabbit
- Application Route: Ingestion
- Result: negative

**Dilithium azelate:**
- Test Type: Reproduction/Developmental toxicity screening test
- Species: Rat
- Application Route: Skin contact
- Result: negative
- Remarks: Based on data from similar materials
**Dolomite:**

**Effects on fertility**

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

**Effects on fetal development**

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

**Calcium oxide:**

**Effects on fertility**

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

**Effects on fetal development**

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

**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
- Result: negative

**Effects on fetal development**

- Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
- Species: Rat
- Application Route: Ingestion
- 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
<table>
<thead>
<tr>
<th>Application Route:</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method:</td>
<td>OECD Test Guideline 422</td>
</tr>
<tr>
<td>Result:</td>
<td>negative</td>
</tr>
</tbody>
</table>

**Effects on fetal development**
- **Test Type:** Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
- **Species:** Rat
- **Application Route:** Ingestion
- **Method:** OECD Test Guideline 422
- **Result:** negative

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

**Repeated dose toxicity**

**Components:**

**Distillates (petroleum), hydrotreated heavy paraffinic:**
- **Species:** Rabbit
- **NOAEL:** 1,000 mg/kg
- **Application Route:** Skin contact
- **Exposure time:** 4 Weeks
- **Method:** OECD Test Guideline 410
- **Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>&gt; 980 mg/m³</td>
</tr>
<tr>
<td>Application Route</td>
<td>inhalation (dust/mist/fume)</td>
</tr>
</tbody>
</table>
Exposure time: 4 Weeks

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

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

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

Dolomite:
Species: Mouse
NOAEL: 1,300 mg/kg
Application Route: Ingestion
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

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**

**Ecotoxicity**

**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:**

<table>
<thead>
<tr>
<th>Component Description</th>
<th>LC50 (Pimephales promelas (fathead minnow)):</th>
<th>EC50 (Daphnia magna (Water flea)):</th>
<th>EC50 (Pseudokirchneriella subcapitata (green algae)):</th>
<th>NOEC (Daphnia magna (Water flea)):</th>
<th>NOEC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic:</td>
<td>&gt; 100 mg/l</td>
<td>&gt; 10,000 mg/l</td>
<td>&gt; 100 mg/l</td>
<td>10 mg/l</td>
<td>&gt; 1.93 mg/l</td>
</tr>
<tr>
<td>Toxicity to fish</td>
<td>Exposure time: 96 h</td>
<td>Exposure time: 48 h</td>
<td>Exposure time: 72 h</td>
<td>Exposure time: 21 d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on data from similar materials</td>
<td>Remarks: Based on data from similar materials</td>
<td>Remarks: Based on data from similar materials</td>
<td>Remarks: Based on data from similar materials</td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae/aquatic plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to microorganisms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Distillates (petroleum), hydrotreated heavy naphthenic:

<table>
<thead>
<tr>
<th>Component Description</th>
<th>LC50 (Pimephales promelas (fathead minnow)):</th>
<th>EC50 (Daphnia magna (Water flea)):</th>
<th>EC50 (Pseudokirchneriella subcapitata (green algae)):</th>
<th>NOEC (Daphnia magna (Water flea)):</th>
<th>NOEC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish</td>
<td>&gt; 100 mg/l</td>
<td>&gt; 10,000 mg/l</td>
<td>&gt; 100 mg/l</td>
<td>10 mg/l</td>
<td>&gt; 1.93 mg/l</td>
</tr>
<tr>
<td></td>
<td>Exposure time: 96 h</td>
<td>Exposure time: 48 h</td>
<td>Exposure time: 72 h</td>
<td>Exposure time: 21 d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on data from similar materials</td>
<td>Remarks: Based on data from similar materials</td>
<td>Remarks: Based on data from similar materials</td>
<td>Remarks: Based on data from similar materials</td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae/aquatic plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to microorganisms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Graphite:
Toxicity to fish: LL50 (Danio rerio (zebra fish)): > 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)): > 100 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants: EL50 (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)): > 100 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

Toxicity to microorganisms: EC50: > 1,012.5 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Copper metal powder:
Toxicity to fish: LC50: > 10 - 100 µg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity): NOEC: > 1 - 10 µg/l

Talc:
Toxicity to fish: LC50 (Brachydanio rerio (zebrafish)): > 100,000 mg/l
Exposure time: 24 h

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: NOEC (Pseudokirchneriella subcapitata (green algae)): > 1
 wrongdoing
**Remarks:** Based on data from similar materials

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

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

NOEC (Crangon crangon (shrimp)): > 1 mg/l
Exposure time: 14 d
Remarks: Based on data from similar materials

**Toxicity to microorganisms:**

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

### Antimony, dialkyl dithiocarbamate:

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

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

### 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
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<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.0</td>
<td>05/06/2020</td>
<td>115189-00020</td>
<td>04/11/2019</td>
<td>05/12/2015</td>
</tr>
</tbody>
</table>

Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

Toxicity to microorganisms  
EC50: > 1,000 mg/l  
Exposure time: 3 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 209

### 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**  
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

### Persistence and degradability

**Product:**

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

### Components:

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

**Biodegradability**  
Result: Not readily biodegradable.  
Biodegradation: 31 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

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

**Biodegradability**  
Result: Not readily biodegradable.  
Biodegradation: 2 - 4 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B
Dilithium azelate:
Biodegradability: Result: 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: 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

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

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

Mobility in soil
No data available

Other adverse effects
No data available
SECTION 13. DISPOSAL CONSIDERATIONS

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

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder, Antimony, dialkyl dithiocarbamate)
Class: 9
Packing group: III
Labels: 9

IATA-DGR
UN/ID No.: UN 3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Copper metal powder, Antimony, dialkyl dithiocarbamate)
Class: 9
Packing group: III
Labels: Miscellaneous,
Packing instruction (cargo aircraft): 956
Packing instruction (passenger aircraft): 956
Environmentally hazardous: yes

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation
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49 CFR
Not regulated as a dangerous good

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

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper metal powder</td>
<td>7440-50-8</td>
<td>5000</td>
<td>43365</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>7783-06-4</td>
<td>100</td>
<td>182481</td>
</tr>
<tr>
<td>Ammonia</td>
<td>7664-41-7</td>
<td>100</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide</td>
<td>7783-06-4</td>
<td>100</td>
<td>182481</td>
</tr>
<tr>
<td>Ammonia</td>
<td>7664-41-7</td>
<td>100</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards
: Respiratory or skin sensitization
: Serious eye damage or eye irritation

SARA 313
: The following components are subject to reporting levels established by SARA Title III, Section 313:
  - Copper metal powder 7440-50-8 >= 10 - < 20 %
  - Tris[bis(2-ethylhexyl)dithiocarbamate o-S,S'] antimony 15991-76-1 >= 1 - < 5 %
  - Antimony, dialkyl dithiocarbamate 15890-25-2 >= 1 - < 5 %

US State Regulations

Pennsylvania Right To Know

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>64742-54-7</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>64742-52-5</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
</tr>
</tbody>
</table>
Copper metal powder 7440-50-8
Talc 14807-96-6
Hydroxystearate sebacate lithium complexes 68815-49-6
Dilithium azelate 38900-29-7
Water 7732-18-5
Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony 15991-76-1
Calcium oxide 1305-78-8
Antimony, dialkyl dithiocarbamate 15890-25-2
Quartz 14808-60-7
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts 68649-42-3
Hydrogen sulfide 7783-06-4
Ammonia 7664-41-7

California Prop. 65
WARNING: This product can expose you to chemicals including Quartz, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances
Distillates (petroleum), hydrotreated heavy paraffinic 64742-54-7
Distillates (petroleum), hydrotreated heavy naphthenic 64742-52-5
Graphite 7782-42-5
Copper metal powder 7440-50-8
Talc 14807-96-6
Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony 15991-76-1
Calcium oxide 1305-78-8
Antimony, dialkyl dithiocarbamate 15890-25-2

California Permissible Exposure Limits for Chemical Contaminants
Distillates (petroleum), hydrotreated heavy paraffinic 64742-54-7
Distillates (petroleum), hydrotreated heavy naphthenic 64742-52-5
Graphite 7782-42-5
Copper metal powder 7440-50-8
Talc 14807-96-6
Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony 15991-76-1
Calcium oxide 1305-78-8
Antimony, dialkyl dithiocarbamate 15890-25-2
Quartz 14808-60-7

California Regulated Carcinogens
Quartz 14808-60-7

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

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

**SECTION 16. OTHER INFORMATION**

Further information
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NFPA 704:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Instability</th>
<th>Special hazard</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

HMIS® IV:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ 2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA CARC : OSHA Specifically Regulated Chemicals/Carcinogens
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3 : USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA : 8-hour, time-weighted average
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA CARC / PEL : Permissible exposure limit (PEL)
OSHA Z-1 / TWA : 8-hour time weighted average
OSHA Z-3 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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 Pre-
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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.

US / Z8