SECTION 1. IDENTIFICATION

Product name: API MODIFIED ARCTIC GRADE

Other means of identification: No data available

SDS-Identcode: 056G

Manufacturer or supplier’s details

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

Recommended use of the chemical and restrictions on use

Recommended use: Industrial use
Thread Compound (Pipe Dope) and Jacking grease for use in
Offshore industries
Mining, (without offshore industries)

Restrictions on use: Do not use on oxygen lines or in oxygen enriched atmos-
pheres.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Eye irritation: Category 2A
Carcinogenicity: Category 2
Reproductive toxicity: Category 1A
Effects on or via lactation
Specific target organ toxicity - repeated exposure: Category 1 (Kidney, Central nervous system, Blood)

GHS label elements

Hazard pictograms:

Signal Word: Danger

Hazard Statements: H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H360FD May damage fertility. May damage the unborn child.
H362 May cause harm to breast-fed children.
H372 Causes damage to organs (Kidney, Central nervous
Precautionary Statements:

**Prevention:**
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
- P263 Avoid contact during pregnancy and while nursing.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.

**Storage:**
- P405 Store locked up.

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

**Other hazards**
None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance / Mixture :** Mixture

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lead</td>
<td>7439-92-1</td>
<td>&gt;= 30 - &lt; 60</td>
</tr>
<tr>
<td></td>
<td>Graphite</td>
<td>7782-42-5</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
<tr>
<td></td>
<td>Distillates (petroleum), hydrotreated light naphthenic</td>
<td>64742-53-6</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
<tr>
<td></td>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>64742-52-5</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
<tr>
<td></td>
<td>Copper metal powder</td>
<td>7440-50-8</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
<tr>
<td></td>
<td>Talc</td>
<td>14807-96-6</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
<tr>
<td></td>
<td>Calcium oxide</td>
<td>1305-78-8</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
<tr>
<td></td>
<td>Quartz</td>
<td>14808-60-7</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
</tbody>
</table>

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

### SECTION 4. FIRST AID MEASURES

**General advice:** In the case of accident or if you feel unwell, seek medical treatment immediately and show this material safety data sheet to the medical personnel in attendance.
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.

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.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.
Suspected of causing cancer.
May damage fertility. May damage the unborn child.
May cause harm to breast-fed children.
Causes damage to organs through prolonged or repeated exposure.

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

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

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

Unsuitable extinguishing media : None known.

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

Hazardous combustion products : Lead compounds
Carbon oxides
Metal oxides

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

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- : Use personal protective equipment.
tive equipment and emergency procedures

Environmental precautions

Methods and materials for containment and cleaning up

Follow safe handling advice and personal protective equipment recommendations.

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 spills cannot be contained.

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

SECTION 7. HANDLING AND STORAGE

Technical measures

Advice on safe handling

Conditions for safe storage

Materials to avoid

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
Keep container tightly closed.
Take care to prevent spills, waste and minimize release to the environment.

Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Store in accordance with the particular national regulations.

Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Explosives
Gases

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>Lead</td>
<td>7439-92-1</td>
<td>TWA</td>
<td>0.05 mg/m³ (Lead)</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.05 mg/m³ (Lead)</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWAEV</td>
<td>0.05 mg/m³ (Lead)</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td>Substance</td>
<td>Concentration</td>
<td>Manager</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
<td>---------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Graphite</td>
<td>TWA (Respirable)</td>
<td>0.05 mg/m³ (Lead)</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated light naphthenic</td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>CA AB OEL</td>
<td></td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy naphthenic</td>
<td>TWA (Mist)</td>
<td>5 mg/m³</td>
<td>CA AB OEL</td>
<td></td>
</tr>
<tr>
<td>Copper metal powder</td>
<td>TWA (Fumes)</td>
<td>0.2 mg/m³</td>
<td>CA AB OEL</td>
<td></td>
</tr>
</tbody>
</table>
### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>7439-92-1</td>
<td>Lead (Lead)</td>
<td>In blood</td>
<td>Not critical</td>
<td>200 µg/l</td>
<td>ACGIH BEI</td>
</tr>
</tbody>
</table>

### Engineering measures

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

**Personal protective equipment**

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

Filter type: Combined particulates and organic vapor type

Hand protection

Material: Chemical-resistant gloves

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

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.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**: Viscous semi-solid

**Color**: black, 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**: >= 162.8 °C
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 : 1.9
Density : No data available
Solubility(ies)
   Water solubility : negligible
Partition coefficient: n-octanol/water : Not applicable
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
   Viscosity, dynamic : No data available
   Viscosity, kinematic : Not applicable
Flow time : No data available
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
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.
SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Skin contact
Ingestion
Eye contact

Acute toxicity
Not classified based on available information.

Components:

Lead:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Remarks: Based on data from similar materials

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

Graphite:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 423
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

Distillates (petroleum), hydrotreated light naphthenic:
Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401

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

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

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
10 / 25

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

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 (Rabbit): > 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

Talc:
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

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

Skin corrosion/irritation
Not classified based on available information.

Components:

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

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

Distillates (petroleum), hydrotreated light naphthenic:
Species: Rabbit
Result: No skin irritation

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

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

Talc:
Species: Rabbit
Result: No skin irritation

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

Serious eye damage/eye irritation
Causes serious eye irritation.

Components:

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

Distillates (petroleum), hydrotreated light naphthenic:
Species: Rabbit
Result: No eye irritation

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

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

Talc:
Species: Rabbit
Result: No eye irritation

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

Respiratory or skin sensitization
Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Components:
Lead:
Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative
Remarks: Based on data from similar materials
Graphite:
Test Type : Local lymph node assay (LLNA)
Routes of exposure : Skin contact
Species : Mouse
Result : negative

Distillates (petroleum), hydrotreated light naphthenic:
Test Type : Buehler Test
Routes of exposure : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative

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

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

Talc:
Routes of exposure : Skin contact
Species : Humans
Result : negative

Calcium oxide:
Test Type : Local lymph node assay (LLNA)
Routes of exposure : Skin contact
Species : Mouse
Method : OECD Test Guideline 429
Result : negative
Remarks : Based on data from similar materials

Germ cell mutagenicity
Not classified based on available information.

Components:
Lead:
Genotoxicity in vitro : Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative
Remarks: Based on data from similar materials
Genotoxicity in vivo:
 Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
 Species: Rat
 Application Route: Ingestion
 Result: positive
 Remarks: Based on data from similar materials

Graphite:
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

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

Distillates (petroleum), hydrotreated light naphthenic:
Genotoxicity in vitro:
 Test Type: Bacterial reverse mutation assay (AMES)
 Method: OECD Test Guideline 476
 Result: negative

Genotoxicity in vivo:
 Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
 Species: Mouse
 Application Route: Intraperitoneal injection
 Method: OECD Test Guideline 474
 Result: negative

Distillates (petroleum), hydrotreated heavy naphthenic:
Genotoxicity in vitro:
 Test Type: Bacterial reverse mutation assay (AMES)
 Method: OECD Test Guideline 471
 Result: negative

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

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

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

Genotoxicity in vivo: Test Type: Chromosome aberration test in vitro
Species: Rat
Application Route: Ingestion
Result: negative

**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

**Carcinogenicity**
Suspected of causing cancer.

**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:**

**Lead:**
Species: Rat
Application Route: Ingestion
Exposure time: 2 Years
Result: positive
Remarks: Based on data from similar materials

Carcinogenicity - Assessment: Limited evidence of carcinogenicity in animal studies

**Distillates (petroleum), hydrotreated light naphthenic:**
Species: Mouse
Application Route: Skin contact
Exposure time: 78 weeks
Result: negative

Distillates (petroleum), hydrotreated heavy naphthenic:
Species: Mouse
Application Route: Skin contact
Exposure time: 78 weeks
Method: OECD Test Guideline 451
Result: negative

Talc:
Species: Mouse
Application Route: inhalation (dust/mist/fume)
Exposure time: 2 Years
Result: negative

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

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

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

Reproductive toxicity
May damage fertility. May damage the unborn child. May cause harm to breast-fed children.

Components:
Lead:
Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Result: positive
Remarks: Based on data from similar materials

Effects on fetal development: Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Result: positive
Remarks: Based on data from similar materials
Reproductive toxicity - Assessment:
Positive evidence of adverse effects on sexual function and fertility from human epidemiological studies., Positive evidence of adverse effects on development from human epidemiological studies., Studies indicating a hazard to babies during the lactation period.

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

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

Distillates (petroleum), hydrotreated light naphthenic:
Effects on fertility:
Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Result: negative

Effects on fetal development:
Test Type: Embryo-fetal development
Species: Rat
Application Route: Skin contact
Result: negative

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

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

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

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

STOT-single exposure
Not classified based on available information.

Components:

Calcium oxide:
Assessment : May cause respiratory irritation.

STOT-repeated exposure
Causes damage to organs (Kidney, Central nervous system, Blood) through prolonged or repeated exposure.

Components:

Lead:
Target Organs : Kidney, Central nervous system, Blood
Assessment : Causes damage to organs through prolonged or repeated exposure.

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:

Lead:
Species : Rat
NOAEL : 0.0015 mg/kg
LOAEL : 0.005 mg/kg
Application Route : Ingestion
Exposure time : 6 - 12 Months
Remarks : Based on data from similar materials
Distillates (petroleum), hydrotreated light naphthenic:
Species: Rabbit
NOAEL: 1,000 mg/kg
Application Route: Skin contact
Exposure time: 4 Weeks
Method: OECD Test Guideline 410

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

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

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

Aspiration toxicity
Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Lead:
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.107 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (Ceriodaphnia dubia (water flea)): 0.029 mg/l
Exposure time: 48 h
### Toxicity to algae/aquatic plants
- **ErC50 (Pseudokirchneriella subcapitata (green algae))**: 0.025 mg/l
  - Exposure time: 72 h
- **EC10 (Pseudokirchneriella subcapitata (green algae))**: 6.1 µg/l
  - Exposure time: 72 h

### Toxicity to fish (Chronic toxicity)
- **EC10 (Pimephales promelas (fathead minnow))**: 20 µg/l
  - Exposure time: 30 d

### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
- **EC10 (Ceriodaphnia dubia (water flea))**: 1.7 µg/l
  - Exposure time: 7 d

### 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

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

### Distillates (petroleum), hydrotreated light naphthenic:
- **Toxicity to fish**
  - **LL50 (Pimephales promelas (fathead minnow))**: > 100 mg/l
    - Exposure time: 96 h
    - Test substance: Water Accommodated Fraction

- **Toxicity to daphnia and other aquatic invertebrates**
  - **EL50 (Daphnia magna (Water flea))**: > 10,000 mg/l
    - Exposure time: 48 h
    - Test substance: Water Accommodated Fraction

- **Toxicity to algae/aquatic plants**
  - **NOELR (Pseudokirchneriella subcapitata (green algae))**: > 100 mg/l
    - Exposure time: 72 h
    - Test substance: Water Accommodated Fraction
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOEC (Daphnia magna (Water flea)): 10 mg/l
  Exposure time: 21 d
  Remarks: Based on data from similar materials

Toxicity to microorganisms:
- NOEC (Photobacterium phosphoreum): > 2.17 mg/l
  Exposure time: 4 d

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

Toxicity to fish:
- LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203
  Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates:
- EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
  Exposure time: 48 h
  Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
- EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201
  Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOEC (Daphnia magna (Water flea)): 10 mg/l
  Exposure time: 21 d
  Remarks: Based on data from similar materials

Toxicity to microorganisms:
- NOEC: > 1.93 mg/l
  Exposure time: 10 min
  Remarks: Based on data from similar materials

**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

**Calcium oxide:**

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

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

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

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

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

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

Toxicity to microorganisms:

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

Quartz:

Ecotoxicology Assessment:

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

Persistence and degradability:

Components:

- Distillates (petroleum), hydrotreated light naphthenic:
  - Biodegradability: Result: Not readily biodegradable.
    - Biodegradation: 2 - 8 %
    - Exposure time: 28 d
    - Method: OECD Test Guideline 301B

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

Bioaccumulative potential:
No data available

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. (Lead, Copper metal powder)
Class: 9
Packing group: III
Labels: 9

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

IMDG-Code
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead, Copper metal powder)
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
SAFETY DATA SHEET
API MODIFIED ARCTIC GRADE

Version 6.4  Revision Date: 05/06/2020  SDS Number: 118984-00019  Date of last issue: 04/11/2019  Date of first issue: 05/18/2015

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

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

**SECTION 15. REGULATORY INFORMATION**

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

**SECTION 16. OTHER INFORMATION**

**Full text of other abbreviations**
- ACGIH: USA. ACGIH Threshold Limit Values (TLV)
- ACGIH BEI: ACGIH - Biological Exposure Indices (BEI)
- CA BC OEL: Canada. British Columbia OEL
- CA ON OEL: Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
- CA QC OEL: Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
- ACGIH / TWA: 8-hour, time-weighted average
- CA AB OEL / TWA: 8-hour Occupational exposure limit
- CA AB OEL / STEL: 15-minute occupational exposure limit
- CA BC OEL / TWA: 8-hour time weighted average
- CA ON OEL / TWA: Time-Weighted Average Limit (TWA)
- CA QC OEL / TWAEV: Time-weighted average exposure value
- CA QC OEL / STEV: Short-term exposure value

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with
SAFETY DATA SHEET

API MODIFIED ARCTIC GRADE

Version 6.4  Revision Date: 05/06/2020  SDS Number: 118984-00019  Date of last issue: 04/11/2019
Date of first issue: 05/18/2015

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

Revision Date: 05/06/2020

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.

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