# SAFETY DATA SHEET

**SPECIALTY ELECTRONIC MATERIALS UK LIMITED**

Safety Data Sheet according to Regulation (EC) No 1907/2006 - Annex II

**Product name: MOLYKOTE® G-N-Plus Paste**

**Revision Date:** 19.01.2023
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SPECIALTY ELECTRONIC MATERIALS UK LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**1.1 Product identifier**
**Product name:** MOLYKOTE® G-N-Plus Paste

**1.2 Relevant identified uses of the substance or mixture and uses advised against**
**Identified uses:** Lubricants and lubricant additives

**1.3 Details of the supplier of the safety data sheet**
**COMPANY IDENTIFICATION**
SPECIALTY ELECTRONIC MATERIALS UK
LIMITED
KINGS COURT, LONDON ROAD
STEVENAGE
England
SG1 2NG
UNITED KINGDOM

**Manufacturer** DuPont Specialty Products GmbH & Co. KG

**Customer Information Number:** 00800-3876-6838
SDSQuestion-EU@dupont.com

**1.4 EMERGENCY TELEPHONE NUMBER**
**24-Hour Emergency Contact:** +(44)-870-8200418
**Local Emergency Contact:** +(44)-870-8200418

## SECTION 2: HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008:**
Skin irritation - Category 2 - H315

Serious eye damage - Category 1 - H318
Specific target organ toxicity - single exposure - Category 3 - H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008:**

**Hazard pictograms**

**Signal word: DANGER**

**Hazard statements**

| | |
|---|---|
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |

**Precautionary statements**

| | |
|---|---|
| P261 | Avoid breathing dust. |
| P264 | Wash skin thoroughly after handling. |
| P280 | Wear protective gloves/ eye protection/ face protection. |
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |

**Supplemental information**The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 13 %
The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 1 %

**Contains** Calcium hydroxide

**2.3 Other hazards**

Endocrine disrupting properties (human health):
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Endocrine disrupting properties (environment):
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

PBT and vPvB assessment:
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical nature:** Inorganic and organic compounds, in mineral oil
**3.2 Mixtures**

This product is a mixture.

| Identification number | Component | Classification according to Regulation (EU) 1272/2008 (CLP) | specific concentration limit/ M-Factors/ Acute toxicity estimate | % |
|---|---|---|---|---|
| **CASRN**<br>1305-62-0<br>**EC-No.**<br>215-137-3<br>**Index-No.**<br>–<br>**REACH No**<br>– | Calcium hydroxide | Skin Irrit. 2 - H315<br>Eye Dam. 1 - H318<br>STOT SE 3 - H335 | Oral ATE: > 2,000 mg/kg<br><br>Inhalation ATE: > 6.04 mg/l (dust/mist)<br><br>Dermal ATE: > 2,500 mg/kg | >= 20.0 - < 30.0 % |

Substances with a workplace exposure limit

| Identification number | Component | Classification according to Regulation (EU) 1272/2008 (CLP) | specific concentration limit/ M-Factors/ Acute toxicity estimate | % |
|---|---|---|---|---|
| **CASRN**<br>7782-42-5<br>**EC-No.**<br>231-955-3<br>**Index-No.**<br>–<br>**REACH No**<br>01-2119486977-12 | Graphite | Not classified | Oral ATE: > 2,000 mg/kg<br><br>Inhalation ATE: > 2 mg/l (dust/mist) | >= 10.0 - < 20.0 % |
| **CASRN**<br>1317-33-5<br>**EC-No.**<br>215-263-9<br>**Index-No.**<br>–<br>**REACH No**<br>– | Molybdenum disulfide | Not classified | Oral ATE: > 2,000 mg/kg<br><br>Dermal ATE: > 2,000 mg/kg | >= 1.0 - < 10.0 % |
| **CASRN** | Paraffin/Hydrocarbon | Not classified | Oral ATE: > 5,000 mg/kg | >= 1.0 - < 10.0 % |

| | | | | |
|---|---|---|---|---|
| 8002-74-2<br>**EC-No.**<br>232-315-6<br>**Index-No.**<br>–<br>**REACH No**<br>– | waxes | | Dermal ATE: > 2,000 mg/kg | |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: FIRST AID MEASURES

**4.1 Description of first aid measures**
**General advice:**
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**4.2 Most important symptoms and effects, both acute and delayed:**
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**4.3 Indication of any immediate medical attention and special treatment needed**
**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## SECTION 5: FIREFIGHTING MEASURES

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

**Unsuitable extinguishing media:** None known.

**5.2 Special hazards arising from the substance or mixture**
**Hazardous combustion products:** Silicon oxides Formaldehyde Carbon oxides Metal oxides Oxides of phosphorus Sulphur oxides

**Unusual Fire and Explosion Hazards:** Exposure to combustion products may be a hazard to health.

**5.3 Advice for firefighters**
**Fire Fighting Procedures:** Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

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

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

**6.2 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.

**6.3 Methods and materials for containment and cleaning up:** Wipe up or scrape up and contain for salvage or 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. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

**6.4 Reference to other sections:**
See sections: 7, 8, 11, 12 and 13.

## SECTION 7: HANDLING AND STORAGE

**7.1 Precautions for safe handling:** Do not swallow. Do not get in eyes. Avoid prolonged or repeated contact with skin. Keep container tightly closed. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice.
Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

**Advice on general occupational hygiene**
Handle in accordance with good industrial hygiene and safety practice. Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**7.2 Conditions for safe storage, including any incompatibilities:** Keep in properly labelled containers. Keep tightly closed. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers**:** None known.

**7.3 Specific end use(s):** Information on specific end use(s) of this product may be provided in a technical data sheet/annex to the SDS (if available).

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters**
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

| Component | Regulation | Type of listing | Value |
|---|---|---|---|
| Graphite | ACGIH | TWA Respirable particulate matter | 2 mg/m3 |
| | Further information: pneumoconiosis: Pneumoconiosis | | |
| | GB EH40 | TWA inhalable dust | 10 mg/m3 |
| | GB EH40 | TWA Respirable dust | 4 mg/m3 |
| Molybdenum disulfide | ACGIH | TWA Inhalable particulate matter | 10 mg/m3 , Molybdenum |
| | ACGIH | TWA Respirable particulate matter | 3 mg/m3 , Molybdenum |
| | GB EH40 | TWA | 10 mg/m3 , Molybdenum |
| | GB EH40 | STEL | 20 mg/m3 , Molybdenum |
| Paraffin/Hydrocarbon waxes | ACGIH | TWA | 2 mg/m3 |
| | Further information: URT irr: Upper Respiratory Tract irritation; nausea: Nausea | | |
| | ACGIH | TWA Fumes | 2 mg/m3 |
| | GB EH40 | TWA | 2 mg/m3 |
| | Further information: 48: The word 'fume' is often used to include gases and vapours. This is not the case for exposure limits where 'fume' should normally be applied to solid particles generated by chemical reactions or condensed from the gaseous state, usually after volatilisation from melted substances. The generation of fume is often accompanied by a chemical reaction such as oxidation or thermal breakdown. | | |
| | GB EH40 | STEL | 6 mg/m3 |
| | Further information: 48: The word 'fume' is often used to include gases and vapours. This is not the case for exposure limits where 'fume' should normally be applied to solid particles generated by chemical reactions or condensed from the gaseous state, usually after volatilisation from melted substances. The generation of fume is often accompanied by a chemical reaction such as oxidation or thermal breakdown. | | |
| | GB EH40 | TWA Fumes | 2 mg/m3 |
| | GB EH40 | STEL Fumes | 6 mg/m3 |

**Derived No Effect Level**
Calcium hydroxide
**Workers**

| *Acute systemic effects* | | *Acute local effects* | | *Long-term systemic effects* | | *Long-term local effects* | |
|---|---|---|---|---|---|---|---|
| Dermal | Inhalation | Dermal | Inhalation | Dermal | Inhalation | Dermal | Inhalation |
| n.a. | n.a. | n.a. | 4 mg/m3 | n.a. | n.a. | n.a. | 1 mg/m3 |

**Consumers**

| *Acute systemic effects* | | | *Acute local effects* | | *Long-term systemic effects* | | | *Long-term local effects* | |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Inhalation | Oral | Dermal | Inhalation | Dermal | Inhalation | Oral | Dermal | Inhalation |
| n.a. | n.a. | n.a. | n.a. | 4 mg/m3 | n.a. | n.a. | n.a. | n.a. | 1 mg/m3 |

Graphite

**Workers**

| *Acute systemic effects* | | *Acute local effects* | | *Long-term systemic effects* | | *Long-term local effects* | |
|---|---|---|---|---|---|---|---|
| Dermal | Inhalation | Dermal | Inhalation | Dermal | Inhalation | Dermal | Inhalation |
| n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 1.2 mg/m3 |

**Consumers**

| *Acute systemic effects* | | | *Acute local effects* | | *Long-term systemic effects* | | | *Long-term local effects* | |
|---|---|---|---|---|---|---|---|---|---|
| Dermal | Inhalation | Oral | Dermal | Inhalation | Dermal | Inhalation | Oral | Dermal | Inhalation |
| n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 813 mg/kg bw/day | n.a. | 0.3 mg/m3 |

**Predicted No Effect Concentration**

Calcium hydroxide

| **Compartment** | **PNEC** |
|---|---|
| Fresh water | 0.49 mg/l |
| Marine water | 0.32 mg/l |
| Intermittent use/release | 0.49 mg/l |
| Sewage treatment plant | 3 mg/l |
| Soil | 1080 mg/kg |

**8.2 Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

**Skin protection**

**Hand protection:** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or

guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.

**Environmental exposure controls**
See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | solid (20 °C, )<br>**Form**<br>paste |
| **Colour** | grey |
| **Odour** | none<br>**Odour Threshold**<br>No data available |
| **Melting point/freezing point** | Melting point/range: No data available |
| **Boiling point or initial boiling point and boiling range** | Boiling point/boiling range: Not applicable |
| **Flammability** | **Gases/Solids**<br>Not classified as a flammability hazard<br>**Liquids**<br>No data available |
| **Lower explosion limit and upper explosion limit / flammability limit** | **Lower explosion limit** / **Lower flammability limit**<br>No data available<br>**Upper explosion limit** / **Upper flammability limit**<br>No data available |
| **Flash point** | > 200 °C<br>Method: (closed cup) |
| **Auto-ignition temperature** | No data available |
| **Decomposition temperature** | **Thermal decomposition**<br>No data available |

| | |
|---|---|
| **pH** | Not applicable |
| **Viscosity** | **Viscosity, kinematic**<br>Not applicable<br>**Viscosity, dynamic**<br>Not applicable |
| **Solubility(ies)** | **Water solubility**<br>No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Vapour pressure** | Not applicable |
| **Density and / or relative density** | **Relative density**<br>1.35 |
| **Relative vapour density** | No data available |
| **Particle characteristics** | **Particle size**<br>No data available |

**9.2 Other information**

| | |
|---|---|
| **Oxidizing properties** | The substance or mixture is not classified as oxidizing. |
| **Self-heating substances** | The substance or mixture is not classified as self heating. |
| **Substances and mixtures, which in contact with water, emit flammable gases** | The substance or mixture does not emit flammable gases in contact with water. |
| **Evaporation rate** | Not applicable |
| **Molecular weight** | No data available |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## SECTION 10: STABILITY AND REACTIVITY

**10.1 Reactivity:** Not classified as a reactivity hazard.

**10.2 Chemical stability:** Stable under normal conditions.

**10.3 Possibility of hazardous reactions:** Can react with strong oxidizing agents. When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapours. Safe handling conditions may be maintained by keeping vapour concentrations within the occupational exposure limit for formaldehyde.

**10.4 Conditions to avoid:** None known.

**10.5 Incompatible materials:** Oxidizing agents

**10.6 Hazardous decomposition products:** Formaldehyde.

## SECTION 11: TOXICOLOGICAL INFORMATION

*Toxicological information appears in this section when such data is available.*

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Acute toxicity**

**Acute toxicity (Acute oral toxicity)**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Acute toxicity (Acute dermal toxicity)**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Acute toxicity (Acute inhalation toxicity)**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Skin corrosion/irritation**
Skin irritation, Category 2
H315: Causes skin irritation.
Classification procedure: Calculation method

Product test data not available. Refer to component data.

**Serious eye damage/eye irritation**
Serious eye damage, Category 1
H318: Causes serious eye damage.

Classification procedure: Calculation method

Product test data not available. Refer to component data.

**Respiratory or skin sensitisation**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Germ cell mutagenicity**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Carcinogenicity**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Reproductive toxicity**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Toxicity to reproduction assessment :
Product test data not available. Refer to component data.

Assessment Teratogenicity:
Product test data not available. Refer to component data.

**STOT - single exposure**
Specific target organ toxicity - single exposure, Category 3
H335: May cause respiratory irritation.
Classification procedure: Calculation method

Product test data not available. Refer to component data.

**STOT - repeated exposure**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Aspiration Hazard**
Not classified
Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for

classification.

Product test data not available. Refer to component data.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Calcium hydroxide**

**Acute toxicity (Acute oral toxicity)**
LD50, Rat, > 2,000 mg/kg OECD Test Guideline 425

**Acute toxicity (Acute dermal toxicity)**
LD50, Rabbit, > 2,500 mg/kg OECD Test Guideline 402

**Acute toxicity (Acute inhalation toxicity)**
LC50, Rat, 4 Hour, dust/mist, > 6.04 mg/l OECD Test Guideline 436

**Skin corrosion/irritation**
Brief contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**
May cause slight temporary eye irritation.

**Respiratory or skin sensitisation**
Did not demonstrate the potential for contact allergy in mice.

**Germ cell mutagenicity**
In vitro genetic toxicity studies were negative.

**Carcinogenicity**
Animal testing did not show any carcinogenic effects.

**Reproductive toxicity**
Toxicity to reproduction assessment :
In animal studies, did not interfere with reproduction. Information given is based on data obtained from similar substances.

Assessment Teratogenicity:
Did not cause birth defects in laboratory animals. Information given is based on data obtained from similar substances.

**STOT - single exposure**
The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT - repeated exposure**
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Aspiration Hazard**
No aspiration toxicity classification

**Graphite**

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

**Acute toxicity (Acute dermal toxicity)**
The dermal LD50 has not been determined.

**Acute toxicity (Acute inhalation toxicity)**
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration. LC50, Rat, 4 Hour, dust/mist, > 2 mg/l OECD Test Guideline 403

**Skin corrosion/irritation**
Brief contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**
May cause slight temporary eye irritation.

**Respiratory or skin sensitisation**
Did not demonstrate the potential for contact allergy in mice.

**Germ cell mutagenicity**
In vitro genetic toxicity studies were negative.

**Reproductive toxicity**
Toxicity to reproduction assessment :
In animal studies, did not interfere with reproduction.

Assessment Teratogenicity:
Did not cause birth defects or any other fetal effects in laboratory animals.

**STOT - single exposure**
The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT - repeated exposure**
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Aspiration Hazard**
No aspiration toxicity classification

**Molybdenum disulfide**

**Acute toxicity (Acute oral toxicity)**
LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

**Acute toxicity (Acute dermal toxicity)**
LD50, Rat, male and female, > 2,000 mg/kg No deaths occurred at this concentration.

**Skin corrosion/irritation**
Brief contact is essentially nonirritating to skin.
Prolonged contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**
May cause slight temporary eye irritation.
Corneal injury is unlikely.

**Respiratory or skin sensitisation**
For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

**Germ cell mutagenicity**
For similar material(s): In vitro genetic toxicity studies were negative.

**Carcinogenicity**
No relevant data found.

**Reproductive toxicity**
Toxicity to reproduction assessment :
No relevant data found.

Assessment Teratogenicity:
No relevant data found.

**STOT - single exposure**
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**STOT - repeated exposure**
No relevant data found.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

**Paraffin/Hydrocarbon waxes**

**Acute toxicity (Acute oral toxicity)**
LD50, Rat, male and female, > 5,000 mg/kg OECD Test Guideline 401 No deaths occurred at this concentration.

**Acute toxicity (Acute dermal toxicity)**
LD50, Rat, male and female, > 2,000 mg/kg OECD 402 or equivalent No deaths occurred at this concentration.

**Acute toxicity (Acute inhalation toxicity)**
The LC50 has not been determined.

**Skin corrosion/irritation**
Brief contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**
Essentially nonirritating to eyes.

**Respiratory or skin sensitisation**
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

**Germ cell mutagenicity**
In vitro genetic toxicity studies were negative. For similar material(s): Animal genetic toxicity studies were negative.

**Carcinogenicity**
Animal testing did not show any carcinogenic effects.

**Reproductive toxicity**
Toxicity to reproduction assessment :
For similar material(s): In animal studies, did not interfere with reproduction.

Assessment Teratogenicity:
For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

**STOT - single exposure**
Available data are inadequate to determine single exposure specific target organ toxicity.

**STOT - repeated exposure**
In animals, effects have been reported on the following organs:
Liver.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

### 11.2. Information on other hazards

**Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Further information**

No data available

## SECTION 12: ECOLOGICAL INFORMATION

*Ecotoxicological information appears in this section when such data is available.*

### 12.1 Toxicity

**Calcium hydroxide**
**Acute toxicity to algae/aquatic plants**
EC50, Raphidocelis subcapitata (freshwater green alga), 72 Hour, 184.47 mg/l, OECD Test Guideline 201
NOEC, Raphidocelis subcapitata (freshwater green alga), 72 Hour, 48 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**
EC50, 3 Hour, 300.4 mg/l, OECD Test Guideline 209

**Chronic toxicity to aquatic invertebrates**
NOEC, 14 d, 32 mg/l

**Graphite**

**Acute toxicity to fish**
No toxicity at the limit of solubility
LC50, Danio rerio (zebra fish), 96 Hour, > 100 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**
No toxicity at the limit of solubility
EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**
EC50, Raphidocelis subcapitata (freshwater green alga), 72 Hour, > 100 mg/l, OECD Test Guideline 201
NOEC, Raphidocelis subcapitata (freshwater green alga), 72 Hour, >= 100 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**
EC50, 3 Hour, > 1,012.5 mg/l, OECD Test Guideline 209

**Molybdenum disulfide**

**Acute toxicity to fish**
Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).
For similar material(s):
LC50, Fish, 96 Hour, > 100 mg/l

**Acute toxicity to aquatic invertebrates**
Based on data from similar materials
EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l

**Acute toxicity to algae/aquatic plants**
Based on data from similar materials
ErC50, algae, 72 Hour, Growth rate, > 100 mg/l

**Toxicity to bacteria**
EC50, 30 Hour, Respiration rates., > 100 mg/l

**Chronic toxicity to fish**
Based on data from similar materials
NOEC, Fish, 34 d, > 10 mg/l

**Chronic toxicity to aquatic invertebrates**
Based on data from similar materials
NOEC, Daphnia magna, 21 d, > 10 mg/l

**Paraffin/Hydrocarbon waxes**

**Acute toxicity to fish**

Based on information for component(s):
Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

**Acute toxicity to aquatic invertebrates**
EL50, Daphnia magna (Water flea), static test, 48 Hour, > 1,000 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**
For similar material(s):
NOELR, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate, > 100 mg/l, OECD Test Guideline 201

**12.2 Persistence and degradability**

**Graphite**
**Biodegradability:** Not applicable

**Molybdenum disulfide**
**Biodegradability:** Biodegradability is not applicable to inorganic substances.

**Paraffin/Hydrocarbon waxes**
**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
**Biodegradation:** 80 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 301B or Equivalent

**12.3 Bioaccumulative potential**

**Calcium hydroxide**
**Bioaccumulation:** Not applicable

**Graphite**
**Bioaccumulation:** Not applicable Not applicable

**Molybdenum disulfide**
**Bioaccumulation:** Partitioning from water to n-octanol is not applicable.

**Paraffin/Hydrocarbon waxes**
**Bioaccumulation:** Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
**Partition coefficient: n-octanol/water(log Pow):** > 6 Calculated.

**12.4 Mobility in soil**

**Calcium hydroxide**
No relevant data found.

**Graphite**

No relevant data found.

**Molybdenum disulfide**
No relevant data found.

**Paraffin/Hydrocarbon waxes**
No relevant data found.

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Calcium hydroxide**
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**Graphite**
This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**Molybdenum disulfide**
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**Paraffin/Hydrocarbon waxes**
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**12.6 Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**12.7 Other adverse effects**

**Calcium hydroxide**
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Graphite**
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Molybdenum disulfide**
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Paraffin/Hydrocarbon waxes**
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

## SECTION 13: DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**

Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

## SECTION 14: TRANSPORT INFORMATION

**Classification for ROAD and Rail transport (ADR/RID):**

| | | |
|---|---|---|
| **14.1** | **UN number or ID number** | Not applicable |
| **14.2** | **UN proper shipping name** | Not regulated for transport |
| **14.3** | **Transport hazard class(es)** | Not applicable |
| **14.4** | **Packing group** | Not applicable |
| **14.5** | **Environmental hazards** | Not considered environmentally hazardous based on available data. |
| **14.6** | **Special precautions for user** | No data available. |

**Classification for SEA transport (IMO-IMDG):**

| | | |
|---|---|---|
| **14.1** | **UN number or ID number** | Not applicable |
| **14.2** | **UN proper shipping name** | Not regulated for transport |
| **14.3** | **Transport hazard class(es)** | Not applicable |
| **14.4** | **Packing group** | Not applicable |
| **14.5** | **Environmental hazards** | Not considered as marine pollutant based on available data. |
| **14.6** | **Special precautions for user** | No data available. |
| **14.7** | **Maritime transport in bulk according to IMO instruments** | Consult IMO regulations before transporting ocean bulk |

**Classification for AIR transport (IATA/ICAO):**

| | | |
|---|---|---|
| **14.1** | **UN number or ID number** | Not applicable |
| **14.2** | **UN proper shipping name** | Not regulated for transport |
| **14.3** | **Transport hazard class(es)** | Not applicable |
| **14.4** | **Packing group** | Not applicable |
| **14.5** | **Environmental hazards** | Not applicable |
| **14.6** | **Special precautions for user** | No data available. |

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional

transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## SECTION 15: REGULATORY INFORMATION

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

**Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.**
Listed in Regulation: Not applicable

**15.2 Chemical safety assessment**

## SECTION 16: OTHER INFORMATION

**Full text of H-Statements referred to under sections 2 and 3.**

| | |
|---|---|
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008**
Skin Irrit. - 2 - H315 - Calculation method
Eye Dam. - 1 - H318 - Calculation method
STOT SE - 3 - H335 - Calculation method

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

| | |
|---|---|
| ACGIH | USA. ACGIH Threshold Limit Values (TLV) |
| GB EH40 | UK. EH40 WEL - Workplace Exposure Limits |
| STEL | Short-term exposure limit (15-minute reference period) |
| TWA | Long-term exposure limit (8-hour TWA reference period) |
| Eye Dam. | Serious eye damage |
| Skin Irrit. | Skin irritation |
| STOT SE | Specific target organ toxicity - single exposure |

**Full text of other abbreviations**

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

**Information Source and References**
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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