



# SAFETY DATA SHEET

## SPECIALTY ELECTRONIC MATERIALS UK LIMITED

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

**Product name:** MOLYKOTE® 165 LT Grease

**Revision Date:** 29.03.2022

**Version:** 7.0

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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® 165 LT Grease

### 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 sensitisation - Category 1 - H317

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: WARNING**

### Hazard statements

H317 May cause an allergic skin reaction.

### Precautionary statements

P261 Avoid breathing dust.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Contains** Pentene, 2,4,4-trimethyl-,sulfurized

## 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.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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**Chemical nature:** Molybdenum disulfide grease

### 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>68515-88-8<br>EC-No.<br>271-114-8<br>Index-No.<br>-<br>REACH No<br>- | Pentene, 2,4,4-trimethyl-,sulfurized | Acute Tox. 4 - H332<br>Skin Irrit. 2 - H315<br>Skin Sens. 1 - H317<br>Aquatic Chronic 4 - H413 | Oral ATE: 3,641 mg/kg<br>Inhalation ATE: 2.17 mg/l (dust/mist)<br>Dermal ATE: > 2,000 mg/kg | >= 1.0 - < 2.5 % |

Substances with a workplace exposure limit

| Identification number   | Component | Classification according to Regulation (EU) 1272/2008 (CLP) | Specific Concentration Limits/ 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>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>Dermal ATE: > 2,000 mg/kg | >= 1.0 - < 10.0 % |
|--|----------------------|----------------|--|-------------------|

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:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists.

Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

**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:** No emergency medical treatment necessary.

#### **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.

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## **SECTION 5: FIREFIGHTING MEASURES**

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### **5.1 Extinguishing media**

**Suitable extinguishing media:** Water spray Alcohol-resistant foam Carbon dioxide (CO<sub>2</sub>) Dry chemical

**Unsuitable extinguishing media:** None known.

### **5.2 Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Carbon oxides Carbon dioxide. Sulfur oxides. Carbon monoxide Sulphur oxides Metal oxides Nitrogen oxides (NO<sub>x</sub>)

**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.

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## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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**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.

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## SECTION 7: HANDLING AND STORAGE

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**7.1 Precautions for safe handling:** Do not get on skin or clothing. Do not swallow. Avoid contact with eyes. 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.

**7.2 Conditions for safe storage, including any incompatibilities:** Keep in properly labelled containers. 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).

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 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/m <sup>3</sup>                  |
|                      | Further information: pneumoconiosis: Pneumoconiosis |                                   |                                      |
|                      | GB EH40   | TWA inhalable dust                | 10 mg/m <sup>3</sup>                 |
|                      | GB EH40   | TWA Respirable dust               | 4 mg/m <sup>3</sup>                  |
| Molybdenum disulfide | ACGIH   | TWA Inhalable particulate matter  | 10 mg/m <sup>3</sup> ,<br>Molybdenum |
|                      | ACGIH   | TWA Respirable particulate matter | 3 mg/m <sup>3</sup> ,<br>Molybdenum  |
|                      | GB EH40   | TWA                               | 10 mg/m <sup>3</sup> ,<br>Molybdenum |

|  |         |      |                                      |
|--|---------|------|--------------------------------------|
|  | GB EH40 | STEL | 20 mg/m <sup>3</sup> ,<br>Molybdenum |
|--|---------|------|--------------------------------------|

**Derived No Effect Level**

Graphite

**Workers**

| <i>Acute systemic effects</i> |            | <i>Acute local effects</i> |            | <i>Long-term systemic effects</i> |            | <i>Long-term local effects</i> |                       |
|-------------------------------|------------|----------------------------|------------|-----------------------------------|------------|--------------------------------|-----------------------|
| 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/m <sup>3</sup> |

**Consumers**

| <i>Acute systemic effects</i> |            |      | <i>Acute local effects</i> |            | <i>Long-term systemic effects</i> |            |                  | <i>Long-term local effects</i> |                       |
|-------------------------------|------------|------|----------------------------|------------|-----------------------------------|------------|------------------|--------------------------------|-----------------------|
| 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/m <sup>3</sup> |

**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. Local exhaust ventilation may be necessary for some 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, use an approved respirator.

**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**

|   |  |
|---|--|
| <b>Physical state</b>   | solid (20 °C, )<br><b>Form</b><br>Grease   |
| <b>Colour</b>   | black  |
| <b>Odour</b>  | slight<br><b>Odour Threshold</b><br>No data available  |
| <b>Melting point/freezing point</b>   | Melting point/range: No data available   |
| <b>Boiling point or initial boiling point and boiling range</b>             | Boiling point/boiling range: Not applicable  |
| <b>Flammability</b>   | Not classified as a flammability hazard  |
| <b>Lower explosion limit and upper explosion limit / flammability limit</b> | <b>Lower explosion limit / Lower flammability limit</b><br>No data available<br><br><b>Upper explosion limit / Upper flammability limit</b><br>No data available |
| <b>Flash point</b>  | > 100 °C<br>Method: (closed cup)   |
| <b>Auto-ignition temperature</b>  | No data available  |
| <b>Decomposition temperature</b>  | <b>Thermal decomposition</b><br>No data available  |
| <b>pH</b>   | Not applicable   |
| <b>Viscosity</b>  | <b>Viscosity, kinematic</b><br>Not applicable<br><br><b>Viscosity, dynamic</b><br>Not applicable   |
| <b>Solubility(ies)</b>  | <b>Water solubility</b><br>No data available   |
| <b>Partition coefficient: n-octanol/water</b>                               | No data available  |
| <b>Vapour pressure</b>  | Not applicable   |
| <b>Density and / or relative</b>  | <b>Relative density</b>  |

|                                 |   |
|---------------------------------|---|
| <b>density</b>                  | 0.98                                      |
| <b>Relative vapour density</b>  | No data available                         |
| <b>Particle characteristics</b> | <b>Particle size</b><br>No data available |

## 9.2 Other information

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

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

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## SECTION 10: STABILITY AND REACTIVITY

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**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.

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

**10.5 Incompatible materials:** Oxidizing agents

**10.6 Hazardous decomposition products:** Hydrogen sulfide. Trimethyl-1-pentene.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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*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.

Acute toxicity estimate, 4 Hour, dust/mist, > 5 mg/l Calculation method

### Skin corrosion/irritation

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.

### Serious eye damage/eye irritation

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.

### Respiratory or skin sensitisation

Skin sensitisation, Category 1

H317: May cause an allergic skin reaction.

Classification procedure: Calculation method

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**

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.

**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:**

**Pentene, 2,4,4-trimethyl-,sulfurized**

**Acute toxicity (Acute oral toxicity)**

LD50, Rat, 3,641 mg/kg

**Acute toxicity (Acute dermal toxicity)**

LD50, Rabbit, > 2,000 mg/kg

**Acute toxicity (Acute inhalation toxicity)**

Respiratory effects. LC50, Rat, 4 Hour, dust/mist, 2.17 mg/l

**Skin corrosion/irritation**

Brief contact may cause skin irritation with local redness.

Prolonged contact may cause moderate skin irritation with local redness.

**Serious eye damage/eye irritation**

May cause slight temporary eye irritation.

**Respiratory or skin sensitisation**

For similar material(s):

Has caused 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. Animal 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**

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

**STOT - repeated exposure**

No relevant data found.

**Aspiration Hazard**

Based on available information, aspiration hazard could not be determined.

**Graphite**

**Acute toxicity (Acute oral toxicity)**

LD50, Rat, > 2,000 mg/kg OECD Test Guideline 401 No deaths occurred at this concentration.

**Acute toxicity (Acute dermal toxicity)**

The dermal LD50 has not been determined.

**Acute toxicity (Acute inhalation toxicity)**

LC50, Rat, 4 Hour, dust/mist, > 2 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

**Skin corrosion/irritation**

Essentially nonirritating to skin.

**Serious eye damage/eye irritation**

May cause slight temporary eye irritation.

May cause slight temporary corneal injury.

**Respiratory or skin sensitisation**

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

**Germ cell mutagenicity**

In vitro genetic toxicity studies were negative.

**Carcinogenicity**

No relevant data found.

**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**

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

**STOT - repeated exposure**

Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs.

**Aspiration Hazard**

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

**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.

**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

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**SECTION 12: ECOLOGICAL INFORMATION**

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

**12.1 Toxicity****Pentene, 2,4,4-trimethyl-,sulfurized****Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Fish, 96 Hour, > 100 mg/l

**Graphite****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).

LC50, Danio rerio (zebra fish), 96 Hour, > 100 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

EC50, Pseudokirchneriella subcapitata (green algae), 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

**12.2 Persistence and degradability**

**Pentene, 2,4,4-trimethyl-,sulfurized**

**Biodegradability:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

10-day Window: Not applicable

**Biodegradation:** 24.6 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301C

**Graphite**

**Biodegradability:** Biodegradation is not applicable.

**Molybdenum disulfide**

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

### 12.3 Bioaccumulative potential

#### Pentene, 2,4,4-trimethyl-,sulfurized

**Partition coefficient: n-octanol/water(log Pow):** Pow: 12.56

#### Graphite

**Bioaccumulation:** No relevant data found.

#### Molybdenum disulfide

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

### 12.4 Mobility in soil

#### Pentene, 2,4,4-trimethyl-,sulfurized

Expected to be relatively immobile in soil (Koc > 5000).

**Partition coefficient (Koc):** > 5000 Estimated.

#### Graphite

No relevant data found.

#### Molybdenum disulfide

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.

#### Pentene, 2,4,4-trimethyl-,sulfurized

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).

### 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

#### Pentene, 2,4,4-trimethyl-,sulfurized

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.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**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.

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**SECTION 14: TRANSPORT INFORMATION**

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**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 |



|  |                    |
|--|--------------------|
| <b>14.3 Transport hazard class(es)</b>   | Not applicable     |
| <b>14.4 Packing group</b>                | Not applicable     |
| <b>14.5 Environmental hazards</b>        | Not applicable     |
| <b>14.6 Special precautions for user</b> | 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.

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## SECTION 15: REGULATORY INFORMATION

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

#### REACH Regulation (EC) No 1907/2006

This product contains only components that have been either registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

#### 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

#### Further information

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

### 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture.

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## SECTION 16: OTHER INFORMATION

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

|      |                                      |
|------|--------------------------------------|
| H315 | Causes skin irritation.              |
| H317 | May cause an allergic skin reaction. |
| H332 | Harmful if inhaled.                  |

H413 May cause long lasting harmful effects to aquatic life.

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008**

Skin Sens. - 1 - H317 - Calculation method

**Revision**

Identification Number: 1290886 / A670 / Issue Date: 29.03.2022 / Version: 7.0

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) |
| Acute Tox.      | Acute toxicity   |
| Aquatic Chronic | Long-term (chronic) aquatic hazard                     |
| Skin Irrit.     | Skin irritation  |
| Skin Sens.      | Skin sensitisation                                     |

**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.

SPECIALTY ELECTRONIC MATERIALS UK LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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