SAFETY DATA SHEET

SPECIALTY ELECTRONIC MATERIALS UK LIMITED

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

Product name: MOLYKOTE® Longterm W2 Multi-Purpose Grease

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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® Longterm W2 Multi-Purpose 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

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:
Serious eye damage - Category 1 - H318
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

H318	Causes serious eye damage.

Precautionary statements

P280	Wear eye protection/ face protection.
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.

Supplemental information

EUH212	Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.

The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 2.9 %

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 64742-52-5 **EC-No.** 265-155-0 **Index-No.** 649-465-00-7 **REACH No** –	distillates (petroleum), hydrotreated heavy naphthenic	Asp. Tox. 1 - H304	Oral ATE: > 5,000 mg/kg Inhalation ATE: > 5.53 mg/l (dust/mist) Dermal ATE: > 5,000 mg/kg	>= 40.0 - < 50.0 %
CASRN 1305-62-0 **EC-No.** 215-137-3 **Index-No.** – **REACH No** –	Calcium hydroxide	Skin Irrit. 2 - H315 Eye Dam. 1 - H318 STOT SE 3 - H335	Oral ATE: > 2,000 mg/kg Dermal ATE: > 2,500 mg/kg	>= 3.0 - < 10.0 %
CASRN 13463-67-7 **EC-No.** 236-675-5 **Index-No.** 022-006-00-2 **REACH No** 01-2119489379-17	titanium dioxide	Carc. 2 - H351	Oral ATE: > 5,000 mg/kg Inhalation ATE: > 5.09 mg/l (dust/mist)	>= 1.0 - < 10.0 %
CASRN 9003-29-6 **EC-No.** 500-004-7 **Index-No.** – **REACH No** –	Polybutene	Skin Irrit. 2 - H315 Asp. Tox. 1 - H304	Oral ATE: > 2,000 mg/kg 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.

Note
distillates (petroleum), hydrotreated heavy naphthenic:
The classification as a carcinogen need not to apply because the substance contains less than 3% DMSO extract as measured by IP 346. Note L of Annex VI to Regulation (EC) 1272/2008.

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 soap and water. If skin irritation occurs: Get medical advice/ attention.

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: Carbon oxides Metal oxides Oxides of phosphorus

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. 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. 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

distillates (petroleum), hydrotreated heavy naphthenic	ACGIH	TWA Inhalable particulate matter	5 mg/m3
	Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen		

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

titanium dioxide
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.	10 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.	700 mg/kg bw/day	n.a.	n.a.

Predicted No Effect Concentration
distillates (petroleum), hydrotreated heavy naphthenic

Compartment	**PNEC**
Oral (Secondary Poisoning)	9.33 mg/kg food

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

titanium dioxide

Compartment	**PNEC**

Fresh water	0.184 mg/l
Marine water	0.0184 mg/l
Intermittent use/release	0.193 mg/l
Sewage treatment plant	100 mg/l
Fresh water sediment	1000 mg/kg
Marine sediment	100 mg/kg
Soil	100 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 gloves chemically resistant to this material. 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. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying 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

Physical state	solid (20 °C,)
	Form Grease
Colour	white
Odour	slight
	Odour Threshold

	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	Not classified as a flammability hazard
Lower explosion limit and upper explosion limit / flammability limit	**Lower explosion limit** / **Lower flammability limit** No data available
	Upper explosion limit / **Upper flammability limit** No data available
Flash point	> 200 °C Method: (closed cup)
Auto-ignition temperature	No data available
Decomposition temperature	**Thermal decomposition** No data available
pH	Not applicable
Viscosity	**Viscosity, kinematic** Not applicable
	Viscosity, dynamic Not applicable
Solubility(ies)	**Water solubility** No data available
Partition coefficient: n-octanol/water	No data available
Vapour pressure	Not applicable
Density and / or relative density	**Relative density** 0.96
Relative vapour density	No data available
Particle characteristics	**Particle size** 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.

10.4 Conditions to avoid: None known.

10.5 Incompatible materials: Oxidizing agents

10.6 Hazardous decomposition products: 1-Butene.

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
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
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
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:

distillates (petroleum), hydrotreated heavy naphthenic

Acute toxicity (Acute oral toxicity)
LD50, Rat, > 5,000 mg/kg OECD Test Guideline 401

Acute toxicity (Acute dermal toxicity)
LD50, Rabbit, > 5,000 mg/kg OECD Test Guideline 402

Acute toxicity (Acute inhalation toxicity)
LC50, Rat, 4 Hour, dust/mist, > 5.53 mg/l OECD Test Guideline 403

Skin corrosion/irritation
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
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Carcinogenicity
No relevant data found.

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

Aspiration Hazard
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Calcium hydroxide

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

Acute toxicity (Acute dermal toxicity)
Based on data from similar materials LD50, Rabbit, > 2,500 mg/kg OECD Test Guideline 402

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

Skin corrosion/irritation
Brief contact may cause moderate skin irritation with local redness.

Serious eye damage/eye irritation
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Respiratory or skin sensitisation
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Germ cell mutagenicity
In vitro genetic toxicity studies were negative.

Carcinogenicity
For similar material(s): Did not cause cancer in laboratory animals.
Assessment Teratogenicity:
No relevant data found.

STOT - single exposure
May cause respiratory irritation.
These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

titanium dioxide

Acute toxicity (Acute oral toxicity)
LD50, Rat, > 5,000 mg/kg OECD Test Guideline 401

Acute toxicity (Acute inhalation toxicity)
LC50, Rat, 4 Hour, dust/mist, > 5.09 mg/l OECD Test Guideline 403

Skin corrosion/irritation
No skin irritation

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

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

Did not cause allergic respiratory reaction in animal tests.

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

Carcinogenicity
Has caused cancer in some laboratory animals. However, the relevance of this to humans is unknown. Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

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

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

Polybutene

Acute toxicity (Acute oral toxicity)
For similar material(s): LD50, Rat, > 2,000 mg/kg OECD Test Guideline 401 No deaths occurred at this concentration.

Acute toxicity (Acute dermal toxicity)
For similar material(s): LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact may cause skin irritation with local redness.

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

Respiratory or skin sensitisation
For similar material(s):
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. Animal genetic toxicity studies were negative.
Information given is based on data obtained from similar substances.

Carcinogenicity
No relevant information found.

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:
For similar material(s): 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
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.
Information given is based on data obtained from similar substances.

Aspiration Hazard
May be fatal if swallowed and enters airways.

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

distillates (petroleum), hydrotreated heavy naphthenic

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).
LL50, Pimephales promelas (fathead minnow), 96 Hour, > 100 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
EL50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l

Acute toxicity to algae/aquatic plants
EL50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l, OECD Test Guideline 201
NOELR, Pseudokirchneriella subcapitata (green algae), 72 Hour, 100 mg/l, OECD Test Guideline 201

Toxicity to bacteria
NOEC, 10 min, >= 1.93 mg/l

Chronic toxicity to aquatic invertebrates
NOELR, Daphnia magna (Water flea), 21 d, 10 mg/l

Calcium hydroxide

Acute toxicity to fish
Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).
LC50, Gasterosteus aculeatus (threespine stickleback), 96 Hour, 457 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 48 Hour, 49.1 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 184.57 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

titanium dioxide

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
NOEC, Lemna minor (duckweed), 7 d, 100 mg/l, OECD Test Guideline 221

Toxicity to bacteria
EC50, 3 Hour, > 1,000 mg/l, OECD Test Guideline 209

Chronic toxicity to fish
NOEC, Danio rerio (zebra fish), 6 d, 160 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 21 d, 5 mg/l

Polybutene

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):
No toxicity at the limit of solubility
LC50, Cyprinus carpio (Carp), 96 Hour, > 1.55 mg/l

Acute toxicity to aquatic invertebrates
For similar material(s):
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
For similar material(s):
No toxicity at the limit of solubility
EC50, Desmodesmus subspicatus (green algae), 72 Hour, > 19.2 mg/l

12.2 Persistence and degradability

distillates (petroleum), hydrotreated heavy naphthenic
Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 31 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Calcium hydroxide
Biodegradability: No relevant data found.

Polybutene
Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 93.9 %
Exposure time: 28 d
Method: OECD Test Guideline 310

12.3 Bioaccumulative potential

distillates (petroleum), hydrotreated heavy naphthenic
Bioaccumulation: No relevant data found.

Calcium hydroxide
Bioaccumulation: Not applicable

titanium dioxide
Bioaccumulation: Bioaccumulation is unlikely.

Polybutene
Bioaccumulation: No data available. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.89 Measured

12.4 Mobility in soil

distillates (petroleum), hydrotreated heavy naphthenic
No relevant data found.

Calcium hydroxide
No relevant data found.

Polybutene
For similar material(s):
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 43.79 Estimated.

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.

distillates (petroleum), hydrotreated heavy naphthenic
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

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

titanium dioxide
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Polybutene
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

distillates (petroleum), hydrotreated heavy naphthenic
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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

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

Polybutene
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.

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer if inhaled.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008
Eye Dam. - 1 - H318 - Calculation method

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Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
TWA	8-hour, time-weighted average
Asp. Tox.	Aspiration hazard
Carc.	Carcinogenicity
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 - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; 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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