



SAFETY DATA SHEET

SPECIALTY ELECTRONIC MATERIALS UK LIMITED

Safety Data Sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH

Product name: MOLYKOTE® Food Machinery Spray Oil

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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® Food Machinery Spray Oil

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)-2038850382

Local Emergency Contact: +(44)-2038850382

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Aerosols - Category 1 - H222, H229

Skin irritation - Category 2 - H315

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

2.2 Label elements

Hazard pictograms



Signal word: DANGER

Hazard statements

- | | |
|------|---|
| H222 | Extremely flammable aerosol. |
| H229 | Pressurised container: May burst if heated. |
| H315 | Causes skin irritation. |

Precautionary statements

- | | |
|-------------|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking. |
| P211 | Do not spray on an open flame or other ignition source. |
| P251 | Do not pierce or burn, even after use. |
| P261 | Avoid breathing spray. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P410 + P412 | Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F. |

Supplemental information The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 19 %

The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 19 %

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 13 %

2.3 Other hazards

Endocrine disrupting properties (human health):

This substance/mixture does not contain components considered to have endocrine disrupting properties for human health according to UK REACH Article 57(f), at levels of 0.1% or higher.

Endocrine disrupting properties (environment):

This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f) 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: Hydrocarbon aerosol propellant

3.2 Mixtures

This product is a mixture.

Identification number	Component	Classification according to GB-CLP	specific concentration limit/ M-Factors/ Acute toxicity estimate	%
CASRN 8042-47-5 EC-No. 232-455-8 Index-No. – Registration number –	White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)	Asp. Tox. 1 - H304	Oral ATE: > 5,000 mg/kg Inhalation ATE: > 5 mg/l (dust/mist) Dermal ATE: > 2,000 mg/kg	>= 60.0 - < 70.0 %
CASRN 68512-91-4 EC-No. 270-990-9 Index-No. 649-083-00-0 Registration number –	Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas	Flam. Gas 1A - H220 Press. Gas Liquefied gas - H280 Skin Irrit. 2 - H315 Aquatic Chronic 3 - H412	Oral ATE: > 2,000 mg/kg Inhalation ATE: 10000 ppm (gas) Dermal ATE: 8,260 mg/kg	>= 10.0 - < 20.0 %
CASRN 75-28-5 EC-No. 200-857-2 Index-No. 601-004-00-0 Registration number –	Isobutane	Flam. Gas 1A - H220 Press. Gas Liquefied gas - H280 STOT SE 3 - H336		>= 1.0 - < 10.0 %
CASRN 74-98-6 EC-No. 200-827-9	propane	Flam. Gas 1A - H220 Press. Gas Liquefied gas - H280	Inhalation ATE: > 200000 ppm (gas)	>= 1.0 - < 10.0 %

Index-No. 601-003-00-5 Registration number —				
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Substances with a workplace exposure limit

Identification number	Component	Classification according to GB-CLP	specific concentration limit/ M-Factors/ Acute toxicity estimate	%
CASRN 106-97-8 EC-No. 203-448-7 Index-No. 601-004-00-0 Registration number —	butane	Flam. Gas 1A - H220 Press. Gas Liquefied gas - H280	Inhalation ATE: 346933 ppm (gas)	>= 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: If inhaled 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. Contaminated work clothing should not be allowed out of the workplace. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. In the case of skin irritation or allergic reactions see a physician. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion: Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Seek medical attention immediately. Consult a physician if 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.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

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

Unsuitable extinguishing media: Do not use direct water stream.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides

Unusual Fire and Explosion Hazards: Flash back possible over considerable distance. May form explosive mixtures in air. Exposure to combustion products may be a hazard to health. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure. Vapours may form explosive mixtures with air.

5.3 Advice for firefighters

Fire Fighting Procedures: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. **EXPLOSION HAZARD.** Fight advanced fires from a protected location. Do not use a solid water stream as it may scatter and spread fire.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Fight fire remotely due to the risk of explosion. 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: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Prevent spreading over

a wide area (e.g. by containment or oil barriers). 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: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. 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 get on skin or clothing. Avoid inhalation of vapour or mist. Do not swallow. Avoid contact with eyes. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Close valve after each use and when empty. Do NOT change or force fit connections. Open the valves slowly to prevent pressure surges. Handle in accordance with good industrial hygiene and safety practice. Do not spray on an open flame or other ignition source. Use only with adequate ventilation. Use only in an area equipped with explosion proof exhaust 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. Ensure that eye flushing systems and safety showers are located close to the working place.

7.2 Conditions for safe storage, including any incompatibilities: Keep in a cool, well-ventilated place. Keep away from direct sunlight. Store in accordance with the particular national regulations. Do not pierce or burn, even after use. Keep cool. Protect from sunlight.

Do not store with the following product types: Self-reactive substances and mixtures. Organic peroxides. Flammable solids. Pyrophoric liquids. Pyrophoric solids. Self-heating substances and mixtures. Substances and mixtures, which in contact with water, emit flammable gases. Explosives. 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
butane	GB EH40	STEL	1,810 mg/m3 750 ppm
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.		
	GB EH40	TWA	1,450 mg/m3 600 ppm
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.		

8.2 Exposure controls

Engineering measures: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Eye/face protection: Wear eye/face protection. Chemical goggles and face shield. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator (meeting standard EN 136) with organic vapor cartridge (meeting standard EN 14387).

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. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

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	aerosol (20 °C,) Form Aerosol containing a dissolved gas
Colour	colourless
Odour	solvent-like 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	Gases/Solids Extremely flammable aerosol. Liquids No data available
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	Not applicable
Auto-ignition temperature	No data available
Decomposition temperature	Thermal decomposition No data available
pH	Substance/mixture is non-soluble (in water).
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	No data available
Density and / or relative density	Relative density 0.7
Relative vapour density	No data available
Particle characteristics	Particle size Not applicable

9.2 Other information

Oxidizing properties	The substance or mixture is not classified as oxidizing.
Aerosols	Extremely flammable aerosol.
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. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure. Vapours may form explosive mixture with air. Extremely flammable aerosol.

10.4 Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials: Oxidizing agents

10.6 Hazardous decomposition products
No hazardous decomposition products are known.

SECTION 11: TOXICOLOGICAL INFORMATION

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

11.1 Information on toxicological effects

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

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

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:

White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)

Acute toxicity (Acute oral toxicity)

LD50, Rat, > 5,000 mg/kg OECD Test Guideline 401

Acute toxicity (Acute dermal toxicity)

LD50, Rabbit, > 2,000 mg/kg OECD Test Guideline 402

Acute toxicity (Acute inhalation toxicity)

LC50, Rat, 4 Hour, dust/mist, > 5 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 cause allergic skin reactions when tested in guinea pigs.

Germ cell mutagenicity

Animal genetic toxicity studies were negative. 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.

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

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.

Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas

Acute toxicity (Acute oral toxicity)

Information given is based on data obtained from similar substances. LD50, Rat, > 2,000 mg/kg OECD Test Guideline 401

Acute toxicity (Acute dermal toxicity)

Information given is based on data obtained from similar substances. LD50, Rabbit, 8,260 mg/kg OECD Test Guideline 402

Acute toxicity (Acute inhalation toxicity)

Information given is based on data obtained from similar substances. LC50, Rat, 4 Hour, gas, 10000 ppm OECD Test Guideline 403

Skin corrosion/irritation

Brief contact may cause moderate skin irritation with local redness.
Information given is based on data obtained from similar substances.

Serious eye damage/eye irritation

May cause slight temporary eye irritation.
Information given is based on data obtained from similar substances.

Germ cell mutagenicity

Animal genetic toxicity studies were negative in some cases and positive in other cases. This material was not mutagenic in an Ames bacterial assay. In vitro genetic toxicity studies were negative in some cases and positive in other cases. Information given is based on data obtained from similar substances.

Carcinogenicity

Based on animal studies, this material demonstrates limited evidence of carcinogenicity.
Information given is based on data obtained from similar product.

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 or any other fetal effects 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 significant adverse effects.
Information given is based on data obtained from similar substances.

Aspiration Hazard

No aspiration toxicity classification

Isobutane

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.

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. Information given is based on data obtained from similar substances.

STOT - single exposure

May cause drowsiness or dizziness.

Target Organs: Central nervous system

STOT - repeated exposure

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

Aspiration Hazard

No aspiration toxicity classification

propane

Acute toxicity (Acute oral toxicity)

Single dose oral LD50 has not been determined.

Acute toxicity (Acute dermal toxicity)

The dermal LD50 has not been determined.

Acute toxicity (Acute inhalation toxicity)

LC50, Rat, 4 Hour, gas, > 200000 ppm

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

For skin sensitization:

No data available

For respiratory sensitization:

No data available

Germ cell mutagenicity

In vitro genetic toxicity studies were negative.

Carcinogenicity

No data available

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

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

STOT - repeated exposure

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

Aspiration Hazard

No aspiration toxicity classification

butane

Acute toxicity (Acute oral toxicity)

Single dose oral LD50 has not been determined.

Acute toxicity (Acute dermal toxicity)

The dermal LD50 has not been determined.

Acute toxicity (Acute inhalation toxicity)

For similar material(s): LC50, Mouse, 4 Hour, gas, 346933 ppm

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.

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. Information given is based on data obtained from similar substances.

STOT - repeated exposure

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

Aspiration Hazard

No aspiration toxicity classification

Further information

No data available

SECTION 12: ECOLOGICAL INFORMATION

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

12.1 Toxicity

White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)

Acute toxicity to fish

Information given is based on data obtained from similar substances.

LC50, Leuciscus idus (Golden orfe), 96 Hour, > 10,000 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

Information given is based on data obtained from similar substances.

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

Acute toxicity to algae/aquatic plants

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, 100 mg/l, OECD Test Guideline 201

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOEC, Daphnia magna (Water flea), 21 d, 10 mg/l

Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas

Acute toxicity to fish

Information given is based on data obtained from similar substances.

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 5.3 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

Information given is based on data obtained from similar substances.

EC50, Daphnia magna (Water flea), 48 Hour, 10 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

Information given is based on data obtained from similar substances.

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 100 mg/l, OECD Test Guideline 201

Information given is based on data obtained from similar substances.

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, 34 mg/l, OECD Test Guideline 201

Chronic toxicity to fish

Based on data from similar materials

NOEC, Pimephales promelas (fathead minnow), 32 d, 0.8 mg/l

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOEC, Ceriodaphnia dubia (water flea), 7 d, 3 mg/l

Isobutane

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 16.33 mg/l

propane

Acute toxicity to fish

No data available

Acute toxicity to aquatic invertebrates

No data available

Acute toxicity to algae/aquatic plants

No data available

12.2 Persistence and degradability

White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)

Biodegradability: Not readily biodegradable. Information given is based on data obtained from similar substances.

Biodegradation: 31 %

Exposure time: 28 d

Method: OECD Test Guideline 301F

Theoretical Oxygen Demand: 3.50 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 1.291 d

Method: Estimated.

Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas

Biodegradability: Readily biodegradable. Information given is based on data obtained from similar substances.

Biodegradation: 96 %

Exposure time: 28 d

Method: OECD Test Guideline 301F

Isobutane

Biodegradability: Readily biodegradable. Information given is based on data obtained from similar substances.

Theoretical Oxygen Demand: 3.58 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 4.4 d

Method: Estimated.

propane

Biodegradability: No data available

Theoretical Oxygen Demand: 3.64 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 8.4 d

Method: Estimated.

butane

Biodegradability: Readily biodegradable.

Biodegradation: 100 %

Exposure time: 17 d

Theoretical Oxygen Demand: 3.58 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 49 Hour

Method: Estimated.

12.3 Bioaccumulative potential

White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Partition coefficient: n-octanol/water(log Pow): 5.18 Measured

Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas

Bioaccumulation: Bioaccumulation is unlikely. Information given is based on data obtained from similar substances.

Partition coefficient: n-octanol/water(log Pow): ca.2.17 at 20 °C

Bioconcentration factor (BCF): 0.9 - 80 estimated

Isobutane

Bioaccumulation: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water(log Pow): 2.8 at 20 °C

propane

Bioaccumulation: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water(log Pow): 1.815

butane

Bioaccumulation: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water(log Pow): 2.31 at 20 °C

12.4 Mobility in soil

White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000).

Koc: 510

Method: Estimated.

Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas

Mobility in soil: No data available.

Isobutane

No data available

propane

No data available

butane

Mobility in soil: No data available

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.

White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)

No data available

Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas

Not persistent, bioaccumulative, and toxic (PBT).

Not very persistent and very bioaccumulative (vPvB).

Isobutane

Not persistent, bioaccumulative, and toxic (PBT).

Not very persistent and very bioaccumulative (vPvB).

propane

Not persistent, bioaccumulative, and toxic (PBT).

Not very persistent and very bioaccumulative (vPvB).

butane

Not persistent, bioaccumulative, and toxic (PBT).

Not very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

White mineral oil (petroleum) (viscosity < 20.5 cSt @ 40C)

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

Hydrocarbons, C3-4-rich, petroleum distillate; Petroleum gas

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

Isobutane

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

propane

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

butane

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 | UN 1950 |
| 14.2 UN proper shipping name | AEROSOLS |
| 14.3 Transport hazard class(es) | 2.1 |
| 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 | UN 1950 |
| 14.2 UN proper shipping name | AEROSOLS |
| 14.3 Transport hazard class(es) | 2.1 |
| 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 | EmS: F-D, S-U |
| 14.7 Transport in bulk according | Consult IMO regulations before transporting ocean bulk |

to Annex II of Marpol and
the IBC Code

Classification for AIR transport (IATA/ICAO):

14.1 UN number	UN 1950
14.2 UN proper shipping name	Aerosols, flammable
14.3 Transport hazard class(es)	2.1
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**UK REACH List of restrictions (Annex 17)**

The following substance/s contained in this product is/are subject through Annex XVII of UK REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. Users of this product have to comply with the restrictions placed upon it by the aforementioned provision.

CAS-No.: 106-97-8	Name: butane
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Restriction status: listed in UK REACH Annex XVII

Restricted uses: See UK Restrictions under REACH (<https://www.hse.gov.uk/reach/list-of-restrictions.xlsx>)

Number on the list: 28, 29

Major Accident Hazard Legislation

Control of Major Accident Hazards Regulations 2015 (COMAH)

P3a	FLAMMABLE AEROSOLS	Lower-tier Quantity:	150 t
		Upper-tier Quantity:	500 t

18	Liquefied flammable gases (including LPG) and natural gas	Lower-tier Quantity:	50 t
		Upper-tier Quantity:	200 t

15.2 Chemical safety assessment

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

SECTION 16: OTHER INFORMATION

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

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

Classification and procedure used to derive the classification for mixtures according to REGULATION (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and subsequent amendments

Aerosol - 1 - H222 - Based on product data or assessment

|| Skin Irrit. - 2 - H315 - Calculation method

Revision

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

Legend

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)
Aquatic Chronic	Long-term (chronic) aquatic hazard
Asp. Tox.	Aspiration hazard
Flam. Gas	Flammable gases
Press. Gas	Gases under pressure
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

Full text of other abbreviations

GB CLP - REGULATION (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, UK SI 2020/1567, and subsequent amendments; UK-REACH - REACH Regulation (EC) No 1907/2006, as amended by UK REACH, UK SI 2019/758 and subsequent amendments; 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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