SAFETY DATA SHEET

SPECIALTY ELECTRONIC MATERIALS UK LIMITED

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

Product name: MOLYKOTE® MKL-N Chain Grease Spray

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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® MKL-N Chain Grease Spray

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:
Aerosols - Category 1 - H222, H229
Skin irritation - Category 2 - H315

Specific target organ toxicity - single exposure - Category 3 - H336
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

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.

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 mist.
P264	Wash skin thoroughly after handling.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Contains 2-methoxy-1-methylethyl acetate; n-butyl acetate; naphtha (petroleum), hydrotreated heavy

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: Hydrocarbon aerosol propellant
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 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	>= 10.0 - < 20.0 %
CASRN 74-98-6 **EC-No.** 200-827-9 **Index-No.** 601-003-00-5 **REACH No** –	propane	Flam. Gas 1 - H220 Press. Gas Compr. Gas - H280	Inhalation ATE: > 425000 ppm (vapour)	>= 10.0 - < 20.0 %
CASRN 64742-48-9 **EC-No.** 919-857-5 **Index-No.** 649-327-00-6 **REACH No** –	naphtha (petroleum), hydrotreated heavy	Flam. Liq. 3 - H226 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 3 - H412	Oral ATE: > 5,000 mg/kg Inhalation ATE: > 4,951 mg/m3 (vapour) Dermal ATE: > 3,160 mg/kg	>= 2.5 - < 10.0 %
CASRN 123-86-4 **EC-No.** 204-658-1 **Index-No.** 607-025-00-1 **REACH No** –	n-butyl acetate	Flam. Liq. 3 - H226 STOT SE 3 - H336 EUH066	Oral ATE: 12,789 mg/kg Dermal ATE: > 14,112 mg/kg	>= 1.0 - < 10.0 %
CASRN 108-65-6 **EC-No.** 203-603-9 **Index-No.** 607-195-00-7 **REACH No** 01-2119475791-29	2-methoxy-1-methylethyl acetate	Flam. Liq. 3 - H226 STOT SE 3 - H336	Oral ATE: 8,532 mg/kg Inhalation ATE: > 23.5 mg/l (vapour) Dermal ATE: > 5,000 mg/kg	>= 1.0 - < 10.0 %
CASRN 64742-55-8 **EC-No.**	distillates (petroleum), hydrotreated light paraffinic	Asp. Tox. 1 - H304	Oral ATE: > 5,000 mg/kg Dermal ATE: > 5,000 mg/kg	>= 1.0 - < 10.0 %

265-158-7 **Index-No.** 649-468-00-3 **REACH No** –				
CASRN 1241-94-7 **EC-No.** 214-987-2 **Index-No.** – **REACH No** 01-2119489394-25	Phosphoric acid, 2-ethylhexyl diphenyl ester	Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411	M-Factor: 1[Acute] Oral ATE: > 15,800 mg/kg Dermal ATE: > 7,940 mg/kg	>= 0.25 - < 1.0 %

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 106-97-8 **EC-No.** 203-448-7 **Index-No.** 601-004-00-0 **REACH No** –	butane	Flam. Gas 1 - H220 Press. Gas Compr. Gas - H280	Inhalation ATE: 658 mg/l (vapour)	>= 50.0 - < 60.0 %

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

Note
naphtha (petroleum), hydrotreated heavy:
The classification as a carcinogen or mutagen need not to apply because the substance contains less than 0.1% w/w benzene (EINECS No 200-753-7). Note P of Annex VI to Regulation (EC) 1272/2008.

Note
distillates (petroleum), hydrotreated light paraffinic:
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 not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Wash off with plenty of water. 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: Maintain adequate ventilation and oxygenation of the patient. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

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. 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. 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 breathe vapours or spray mist. Do not swallow. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. 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. Handle in accordance with good industrial hygiene and safety practice. Do not spray on an open flame or other ignition source.
Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

7.2 Conditions for safe storage, including any incompatibilities: Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. 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: Oxidizing agents. 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.
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
propane	ACGIH		See Further information
	Further information: See Appendix F: Minimal Oxygen Content; EX: Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV® could approach 10% of the lower explosive limit.; asphyxia: Asphyxia; D: Simple asphyxiant; see discussion covering Minimal Oxygen Content found in the 'Definitions and Notations' section following the NIC tables		
n-butyl acetate	ACGIH	TWA	50 ppm
	Further information: URT irr: Upper Respiratory Tract irritation; eye irr: Eye irritation		
	ACGIH	STEL	150 ppm
	Further information: URT irr: Upper Respiratory Tract irritation; eye irr: Eye irritation		
	GB EH40	TWA	724 mg/m3 150 ppm
	GB EH40	STEL	966 mg/m3 200 ppm
	2019/1831/EU	STEL	723 mg/m3 150 ppm
	Further information: Indicative		
	2019/1831/EU	TWA	241 mg/m3 50 ppm
	Further information: Indicative		
2-methoxy-1-methylethyl acetate	US WEEL	TWA	50 ppm
	2000/39/EC	STEL	550 mg/m3 100 ppm
	Further information: skin: Identifies the possibility of significant uptake through the skin; Indicative		
	2000/39/EC	TWA	275 mg/m3 50 ppm
	Further information: skin: Identifies the possibility of significant uptake through the skin; Indicative		
	GB EH40	TWA	274 mg/m3 50 ppm
	Further information: Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
	GB EH40	STEL	548 mg/m3 100 ppm
	Further information: Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
distillates (petroleum), hydrotreated light paraffinic	ACGIH	TWA Inhalable particulate matter	5 mg/m3
	Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen		
butane	ACGIH	STEL	1,000 ppm
	Further information: EX: Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV® could approach 10% of the lower explosive limit.; CNS impair: Central Nervous System impairment		
	GB EH40	STEL	1,810 mg/m3 750 ppm
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.; Carcinogenic only applies if butane contains more than 0.1% of buta-1,3-diene		
	GB EH40	TWA	1,450 mg/m3 600 ppm
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.; Carcinogenic only applies if butane contains more than 0.1% of buta-1,3-diene		

This material contains a simple asphyxiant which may displace oxygen. Insure adequate ventilation to prevent an oxygen deficient atmosphere.
The minimum requirement of 19.5% oxygen at sea level (148 torr O2, dry air) provides an adequate amount of oxygen for most work assignments.

Derived No Effect Level
n-butyl acetate
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.	600 mg/m3	11 mg/kg bw/day	600 mg/m3	11 mg/kg bw/day	300 mg/m3	n.a.	300 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
6 mg/kg bw/day	300 mg/m3	2 mg/kg bw/day	n.a.	300 mg/m3	6 mg/kg bw/day	35.7 mg/m3	2 mg/kg bw/day	n.a.	35.7 mg/m3

2-methoxy-1-methylethyl acetate
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.	550 mg/m3	796 mg/kg bw/day	275 mg/m3	n.a.	n.a.

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.	320 mg/kg bw/day	33 mg/m3	36 mg/kg bw/day	n.a.	33 mg/m3

Phosphoric acid, 2-ethylhexyl diphenyl ester
Workers

Acute systemic effects		***Acute local effects***		***Long-term systemic effects***		***Long-term local effects***	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
5.84 mg/kg bw/day	40.88 mg/m3	n.a.	n.a.	0.73 mg/kg bw/day	5.11 mg/m3	n.a.	n.a.

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

52.67 mg/kg bw/day	58.45 mg/m3	16.7 mg/kg bw/day	n.a.	n.a.	0.44 mg/kg bw/day	1.54 mg/m3	0.44 mg/kg bw/day	n.a.	n.a.

Predicted No Effect Concentration

n-butyl acetate

Compartment	**PNEC**
Fresh water	0.18 mg/l
Marine water	0.018 mg/l
Intermittent use/release	0.36 mg/l
Fresh water sediment	0.981 mg/kg dry weight (d.w.)
Marine sediment	0.0981 mg/kg dry weight (d.w.)
Soil	0.09 mg/kg dry weight (d.w.)
Sewage treatment plant	35.6 mg/l

2-methoxy-1-methylethyl acetate

Compartment	**PNEC**
Fresh water	0.635 mg/l
Marine water	0.0635 mg/l
Intermittent use/release	6.35 mg/l
Sewage treatment plant	100 mg/l
Fresh water sediment	3.29 mg/kg dry weight (d.w.)
Marine sediment	0.329 mg/kg dry weight (d.w.)
Soil	0.29 mg/kg dry weight (d.w.)

distillates (petroleum), hydrotreated light paraffinic

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

Phosphoric acid, 2-ethylhexyl diphenyl ester

Compartment	**PNEC**
Fresh water	1.8 µg/l
Marine water	0.18 µg/l
Intermittent use/release	1.5 µg/l
Sewage treatment plant	100 mg/l
Fresh water sediment	5.8 mg/kg
Marine sediment	0.58 mg/kg
Soil	1.16 mg/kg
Oral (Secondary Poisoning)	3.86 mg/kg food

8.2 Exposure controls

Engineering controls: 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: 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. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. 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	black

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	Extremely flammable aerosol.
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	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	No data available
Density and / or relative density	**Relative density** 0.72
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: 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.

No hazard from gas. Swallowing is unlikely because of the physical state.
As product: Single dose oral LD50 has not been determined.

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.

Prolonged skin contact is unlikely to result in absorption of harmful amounts.
As product: The dermal LD50 has not been determined.

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.

In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). May cause central nervous system effects. At air concentrations <1000 ppm, propane exerts very little physiological action; at 100,000 ppm and above it may produce dizziness or other central nervous system effects. Excessive exposure may cause headache, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects, including death.
As product: The LC50 has not been determined.

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

Brief contact may cause slight skin irritation with local redness.
May cause drying and flaking of the skin.

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.

May cause slight eye irritation.
Corneal injury is unlikely.

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.

Based on information for component(s):
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

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

Based on information for component(s): In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

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

No relevant data found.

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 :
Based on information for component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Assessment Teratogenicity:
Based on information for component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

STOT - single exposure
Specific target organ toxicity - single exposure, Category 3
H336: May cause drowsiness or dizziness.
Classification procedure: Calculation method

Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

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

Based on information for component(s):
In animals, effects have been reported on the following organs:
Adrenal gland.
Bone marrow.
Kidney.
Liver.
Lung.
Nasal tissue.
Stomach.
Thymus.

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

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

COMPONENTS INFLUENCING TOXICOLOGY:

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.

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, male and female, 4 Hour, vapour, > 425000 ppm

Skin corrosion/irritation
No hazard from gas.
Liquid may cause frostbite upon skin contact.
Effects may be delayed.

Serious eye damage/eye irritation
Essentially nonirritating to eyes.
Liquid may cause frostbite.

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
No relevant data found.

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

Assessment Teratogenicity:
Screening studies suggest that this material does not affect fetal development.

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

naphtha (petroleum), hydrotreated heavy

Acute toxicity (Acute oral toxicity)
Based on data from similar materials LD50, Rat, > 5,000 mg/kg

Acute toxicity (Acute dermal toxicity)
Based on data from similar materials LD50, Rabbit, > 3,160 mg/kg

Acute toxicity (Acute inhalation toxicity)
Based on data from similar materials LC50, Rat, 4 Hour, vapour, > 4,951 mg/m3

Skin corrosion/irritation
Brief contact may cause slight skin irritation with local redness.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation
Based on data from similar materials
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Respiratory or skin sensitisation
For skin sensitization:
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.

Carcinogenicity
No relevant data found.

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

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

STOT - single exposure
May cause drowsiness or dizziness.

STOT - repeated exposure
Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

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.

n-butyl acetate

Acute toxicity (Acute oral toxicity)
LD50, Rat, male, 12,789 mg/kg

LD50 Oral, Rat, female, 10,760 mg/kg

Acute toxicity (Acute dermal toxicity)
LD50, Rabbit, male and female, > 14,112 mg/kg

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

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.
Prolonged contact may cause severe skin irritation with local redness and discomfort.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation
May cause moderate eye irritation.
Corneal injury is unlikely.
Vapor may cause eye irritation experienced as mild discomfort and redness.

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

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 laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, did not interfere with fertility. No toxicity to reproduction

Assessment Teratogenicity:
Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

STOT - single exposure
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Nervous system

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

Aspiration Hazard
Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

2-methoxy-1-methylethyl acetate

Acute toxicity (Acute oral toxicity)
Observations in animals include: Lethargy. LD50, Rat, 8,532 mg/kg

Acute toxicity (Acute dermal toxicity)
LD50, Rabbit, > 5,000 mg/kg

Acute toxicity (Acute inhalation toxicity)
LC0, Rat, 6 Hour, vapour, > 23.5 mg/l No deaths occurred at this concentration.

LC50, Rat, 4 Hour, vapour, > 35.2 mg/l OECD Test Guideline 403

Skin corrosion/irritation
Prolonged contact is essentially nonirritating to skin.

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

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.

Carcinogenicity
Similar material(s) did not cause cancer in laboratory animals.

Reproductive toxicity
Toxicity to reproduction assessment :
For similar material(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. No toxicity to reproduction

Assessment Teratogenicity:
Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

STOT - single exposure
May cause drowsiness or dizziness.
Route of Exposure: Oral
Target Organs: Central nervous system

STOT - repeated exposure
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

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

distillates (petroleum), hydrotreated light paraffinic

Acute toxicity (Acute oral toxicity)
For similar material(s): LD50, Rat, > 5,000 mg/kg

Acute toxicity (Acute dermal toxicity)
For similar material(s): LD50, Rabbit, > 5,000 mg/kg

Skin corrosion/irritation
Brief contact may cause slight skin irritation with local redness.
Prolonged contact may cause skin irritation with local redness.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation
May cause slight temporary 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 in some cases and positive in other cases.
Animal 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:
Typical for this family of materials. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

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

STOT - repeated exposure
For similar material(s):
In animals, effects have been reported on the following organs:
Adrenal gland.
Bone marrow.
Liver.
Thymus.
Stomach.
Lung.

Aspiration Hazard
May be fatal if swallowed and enters airways.

Phosphoric acid, 2-ethylhexyl diphenyl ester

Acute toxicity (Acute oral toxicity)
LD50, Rat, > 15,800 mg/kg

Acute toxicity (Acute dermal toxicity)
LD50, Rabbit, > 7,940 mg/kg

Acute toxicity (Acute inhalation toxicity)
No adverse effects are anticipated from single exposure to mist.

Skin corrosion/irritation
Prolonged contact may cause slight skin irritation with local redness.

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

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

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 :
No relevant data found.

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

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)
LC50, Rat, 4 Hour, vapour, 658 mg/l

Skin corrosion/irritation
No hazard from gas.

Serious eye damage/eye irritation
No hazard from gas.

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. 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
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 additional significant adverse effects.

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

11.2. Information on other hazards

Endocrine disrupting properties

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

Further information

No data available

SECTION 12: ECOLOGICAL INFORMATION

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

12.1 Toxicity

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

propane

Acute toxicity to fish
Material is not classified as dangerous to aquatic organisms.

naphtha (petroleum), hydrotreated heavy

Acute toxicity to fish
Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).
Based on data from similar materials
LL50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 10 - 30 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
Based on data from similar materials
EL50, Daphnia magna (Water flea), 48 Hour, > 22 - 46 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
Based on data from similar materials
EL50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201
Based on data from similar materials
NOELR, Pseudokirchneriella subcapitata (green algae), 72 Hour, 1 mg/l, OECD Test Guideline 201

n-butyl acetate

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, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 18 mg/l

Acute toxicity to aquatic invertebrates
LC50, Daphnia magna (Water flea), 48 Hour, 44 mg/l

Acute toxicity to algae/aquatic plants
ErC50, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 648 mg/l

Toxicity to bacteria
EC50, Bacteria, 16 Hour, > 1,000 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 21 d, 23 mg/l

2-methoxy-1-methylethyl acetate

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, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 100 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 48 Hour, > 500 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (microalgae), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Pseudokirchneriella subcapitata (green algae), 96 Hour, > 1,000 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC10, 0.5 Hour, > 1,000 mg/l

Chronic toxicity to fish
NOEC, Oryzias latipes (Orange-red killifish), 14 d, 47.5 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 21 d, >= 100 mg/l

distillates (petroleum), hydrotreated light paraffinic

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, Pimephales promelas (fathead minnow), 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, 10 mg/l, Test substance: Water Accommodated Fraction

Phosphoric acid, 2-ethylhexyl diphenyl ester

Acute toxicity to fish
Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).
No toxicity at the limit of solubility
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 15 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50, Daphnia magna (Water flea), 48 Hour, 0.15 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
EyC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth inhibition (cell density reduction), 0.2 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, activated sludge, 3 Hour, > 10,000 mg/l

Chronic toxicity to fish
NOEC, Oncorhynchus mykiss (rainbow trout), flow-through test, 71 d, survival, 0.0212 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), flow-through test, 21 d, number of offspring, 0.018 mg/l

butane

Acute toxicity to fish
Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

12.2 Persistence and degradability

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

propane

Biodegradability: No relevant data found.

naphtha (petroleum), hydrotreated heavy

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
Based on data from similar materials 10-day Window: Pass
Biodegradation: 89 %

Exposure time: 28 d
Method: OECD Test Guideline 301F

n-butyl acetate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

2-methoxy-1-methylethyl acetate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass
Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent
10-day Window: Not applicable
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 302B or Equivalent

distillates (petroleum), hydrotreated light paraffinic

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: Fail
Biodegradation: 31 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Phosphoric acid, 2-ethylhexyl diphenyl ester

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass
Biodegradation: 82 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
10-day Window: Not applicable
Biodegradation: 74 %
Exposure time: 24 Hour
Method: OECD Test Guideline 302A or Equivalent

butane

Biodegradability: Material is expected to be readily biodegradable.

12.3 Bioaccumulative potential

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

propane
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.36 Measured

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

n-butyl acetate
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): Pow: 3.2 at 25 °C Measured
Bioconcentration factor (BCF): 15 Fish Estimated.

2-methoxy-1-methylethyl acetate
Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.2 Measured

distillates (petroleum), hydrotreated light paraffinic
Bioaccumulation: For this family of materials: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Phosphoric acid, 2-ethylhexyl diphenyl ester
Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 5.73 Measured
Bioconcentration factor (BCF): 433 - 735 Cyprinus carpio (Carp) 56 d Measured

butane
Bioaccumulation: 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

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

propane
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 24 - 460 Estimated.

naphtha (petroleum), hydrotreated heavy
No relevant data found.

n-butyl acetate
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 19 - 70 Estimated.

2-methoxy-1-methylethyl acetate

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 1.7 Estimated.

distillates (petroleum), hydrotreated light paraffinic

No relevant data found.

Phosphoric acid, 2-ethylhexyl diphenyl ester

Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient (Koc): > 5000 Estimated.

butane

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 44 - 900 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.

Polybutene

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

propane

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).

naphtha (petroleum), hydrotreated heavy

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

n-butyl acetate

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

2-methoxy-1-methylethyl acetate

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).

distillates (petroleum), hydrotreated light paraffinic

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).

Phosphoric acid, 2-ethylhexyl diphenyl ester

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).

butane

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).

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

Polybutene
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.

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

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

2-methoxy-1-methylethyl acetate
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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

Phosphoric acid, 2-ethylhexyl diphenyl ester
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 or ID 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 or ID 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	**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**	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

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: FLAMMABLE AEROSOLS
Number in Regulation: P3a
150 t
500 t
Listed in Regulation: Liquefied extremely flammable gases (including LPG) and natural gas
Number in Regulation: 18
50 t
200 t
Listed in Regulation: Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)
Number in Regulation: 34
2,500 t
25,000 t

Further information
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

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.

SECTION 16: OTHER INFORMATION

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

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H226	Flammable liquid and vapour.
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.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
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
Aerosol - 1 - H222 - Based on product data or assessment

Skin Irrit. - 2 - H315 - Calculation method
STOT SE - 3 - H336 - Calculation method

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

Legend

2000/39/EC	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2019/1831/EU	Europe. Commission Directive 2019/1831/EU establishing a fifth list of indicative occupational exposure limit values
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
GB EH40	UK. EH40 WEL - Workplace Exposure Limits
STEL	Short term exposure limit
TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)
Aquatic Acute	Short-term (acute) aquatic hazard
Aquatic Chronic	Long-term (chronic) aquatic hazard
Asp. Tox.	Aspiration hazard
Flam. Gas	Flammable gases
Flam. Liq.	Flammable liquids
Press. Gas	Gases under pressure
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

Full text of other abbreviations
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR -

(Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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

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