



SAFETY DATA SHEET ACCORDING TO REGULATION (EC) 1907/2006

Product name: Underbody Protection Spray Black

Creation date: 11.10.2021, Revision: 17.07.2023

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name

Underbody Protection Spray Black

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses

Sealant. An agent for protection against corrosion.

Uses advised against

No information.

1.3 Details of the supplier of the safety data sheet

Supplier

WINKEL GmbH
Lisztstraße 1
53881 Euskirchen - Germany
Tel.: +49 2251 77 69 400-401
Fax: +49 2251 77 69 402
E-Mail: info@winkelgroup.
Internet: www.winkelgroup.de

1.4 Emergency Telephone Number

Emergency

112
Tel.: +49 2251 77 69 400-401

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Aerosol 1; H222 Extremely flammable aerosol.
Aerosol 1; H229 Pressurised container: May burst if heated.
Asp. Tox. 1; H304 May be fatal if swallowed and enters airways.
Skin Irrit. 2; H315 Causes skin irritation.
Eye Irrit. 2; H319 Causes serious eye irritation.
STOT SE 3; H336 May cause drowsiness or dizziness.
Aquatic Chronic 2; H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

**Signal word: DANGER**

H222 Extremely flammable aerosol.

H229 Pressurised container: May burst if heated.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H411 Toxic to aquatic life with long lasting effects.

P102 Keep out of reach of children.

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.

P273 Avoid release to the environment.

P302 + P352 + P362 + P364 IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.

P501 Dispose of contents/container in accordance with local/national regulation.

Contains:

hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

2.3 Other hazards**PBT/vPvB**

No information.

Endocrine disrupting properties

No information.

Additional information

No information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

For mixtures see 3.2.

3.2 Mixtures

Name	CAS EC Index Reach	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Concentration Limits	Notes for substances
dimethyl ether	115-10-6 204-065-8 603-019-00-8 01-2119472128-37	25-50	Flam. Gas 1; H220 Press. Gas; H280	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	64742-49-0 927-510-4 - 01-2119475515-33	10-50	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Chronic 2; H411	/	/

ethyl methyl ketone	78-93-3 201-159-0 606-002-00-3 01-2119457290-43	2,5-10	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066	/	/
ethyl acetate	141-78-6 205-500-4 607-022-00-5	2,5-10	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066	/	/
hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	- 920-750-0 - 01-2119473851-33	2,5-10	Flam. Liq. 2; H225 Asp. Tox. 1; H304 STOT SE 3; H336 Aquatic Chronic 2; H411	/	/
cyclohexane	110-82-7 203-806-2 601-017-00-1	2,5-10	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Acute 1; H400; M = 1 Aquatic Chronic 1; H410; M = 1	/	/
hydrocarbons, C9, aromatics	64742-95-6 918-668-5 - 01-2119455851-35	<2,5	Flam. Liq. 3; H226 Asp. Tox. 1; H304 STOT SE 3; H335 STOT SE 3; H336 Aquatic Chronic 2; H411 EUH066	/	P
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	- 921-024-6 - 01-2119475514-35	<2,5	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Chronic 2; H411	/	/
n-hexane	110-54-3 203-777-6 601-037-00-0	<1	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Repr. 2; H361F STOT RE 2; H373 Aquatic Chronic 2; H411	STOT RE 2; H373; C ≥ 5%	/

Notes for substances

P	The harmonised classification as a carcinogen or mutagen applies unless it can be shown that the substance contains less than 0,1 % w/w benzene (Eines No 200-753-7), in which case a classification in accordance with Title II of this Regulation shall be performed also for those hazard classes. Where the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P260-P262-P301 + P310-P331 shall apply.
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Product description

Hydrocarbons with a propellant.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General notes

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency. No action shall be taken involving any personal risk or without suitable training.

Following inhalation

If symptoms occur, seek medical advice. Remove patient to fresh air - move out of dangerous area. Keep at rest in a position comfortable for breathing. If breathing is irregular or respiratory arrest occurs provide artificial respiration. In case of unconsciousness bring patient into stable side position and seek medical attention.

Following skin contact

Take off all contaminated clothing. Areas of the body that have come into contact with the product must be rinsed with water and soap. If symptoms develop and persist, seek medical attention. Wash contaminated clothes and shoes before reuse.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. If irritation persists, seek professional medical attention.

Following ingestion

Not likely. Accidental ingestion: Do not induce vomiting! Immediately consult a doctor. Show the physician the safety data sheet or label. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed**Following inhalation**

Vapours may cause drowsiness and dizziness. Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation. Coughing, sneezing, nasal discharge, labored breathing. Because of breathing vapours at high concentrations symptoms like headache, dizziness, nausea and unconsciousness.

Following skin contact

Irritating to the skin. Itching, redness, pain.

Following eye contact

Strongly irritates the eyes. Redness, tearing, pain.

Following ingestion

Ingestion is unlikely because it is an aerosol. Accidental ingestion: May cause nausea/vomiting and diarrhea. May be fatal if swallowed and enters airways.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

No information.

5.2 Special hazards arising from the substance or mixture**Hazardous combustion products**

In case of a fire toxic gases can be generated; do not inhale gases/smoke. In the event of fire the following can be generated: carbon monoxide (CO), carbon dioxide (CO₂).

5.3 Advice for firefighters**Protective actions**

In case of fire or heating do not breathe fumes/vapours. Cool containers at risk with water spray. If possible remove containers from endangered area. In case of fire aerosols can explode and be propelled to considerable distances in different directions.

Special protective equipment for fire-fighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8).

Precautionary measures

Ensure adequate ventilation. Keep away from sources of ignition and/or heat; No smoking!

Emergency procedures

Prevent access to unauthorised personnel. Prevent access to unprotected personnel. Avoid contact with skin and eyes. Do not breathe vapour or mist.

For emergency responders

Use personal protective equipment.

6.2 Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. If accidental large entry into water or ground occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

For containment

Stem the spill if this does not pose risks.

For cleaning up

Collect the spray cans and hand them over to an authorized waste disposal contractor. Release of liquid because of damaged aerosol can (release of large quantities): Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Do not absorb spillage with sawdust or other combustible material. Dispose in accordance with applicable regulations (see Section 13). Clean residue from spill site.

OTHER INFORMATION

See Section 7: safe handling.

6.4 Reference to other sections

See also sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures

Measures to prevent fire

Ensure adequate ventilation. Take precautionary measures against static discharges. Keep away from sources of ignition - no smoking. Use spark-proof tools. Pressurized container; protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not spray on a naked flame or incandescent material.

Measures to prevent aerosol and dust generation

Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

Measures to protect the environment

Avoid release to the environment.

Other measures

No information.

Advice on general occupational hygiene

Wear suitable protective equipment; see Section 8. Refer to instructions on label and regulations for safety and health at work. Use good personal hygiene practices – wash hands at breaks and when done working with material. Avoid contact with skin, eyes and clothes. Do not eat, drink or smoke while working. Do not breathe vapours/mist. Consider measures

required in Section 8 of this safety data sheet.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in accordance with local regulations. Keep in well closed containers. Keep in cool and well ventilated area. Protect from open fire, heat and direct sunlight. Keep away from sources of ignition. Keep away from oxidising substances. Keep away from food, drink and animal feeding stuffs.

Packaging materials

The original container of producer.

Requirements for storage rooms and vessels

Do not store in unlabelled containers.

Storage class

No information.

Further information on storage conditions

No information.

7.3 Specific end use(s)

Recommendations

No information.

Industrial sector specific solutions

No information.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

Name	mg/m ³	ml/m ³	Short-term value mg/m ³	Short-term value ml/m ³	Remark	Biological Tolerance Values
Butan-2-one (methyl ethyl ketone) (78-93-3)	600	200	899	300	Sk, BMGV	70 µmol butan-2- one/L in urine - Post shift 70 µmol butan-2- one/L in urine - Post shift
n-Hexane (110-54-3)	72	20	/	/	/	/
Cyclohexane (110- 82-7)	350	100	1050	300	/	/
Dimethyl ether (115-10-6)	766	400	958	500	/	/
Ethyl acetate (141- 78-6)	734	200	1468	400	/	/

Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

DNEL/DMEL values

For product

No information.

For components

Name	Type	Exposure route	exp. frequency	Remark	value
dimethyl ether	Worker	inhalation	long term systemic effects	/	1894 mg/m ³

dimethyl ether	Consumer	inhalation	long term systemic effects	/	471 mg/m ³
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Worker	inhalation	long term systemic effects	/	2085 mg/m ³
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Worker	dermal	long term systemic effects	/	300 mg/kg bw/day
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Consumer	inhalation	long term systemic effects	/	447 mg/m ³
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Consumer	dermal	long term systemic effects	/	149 mg/kg bw/day
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Consumer	oral	long term systemic effects	/	149 mg/kg bw/day

PNEC values

For product

No information.

For components

Name	Exposure route	Remark	value
dimethyl ether	fresh water	/	0.155 mg/L
dimethyl ether	marine water	/	0.016 mg/L
dimethyl ether	water, intermittent release	fresh water	1.549 mg/L
dimethyl ether	water treatment plant	/	160 mg/L
dimethyl ether	fresh water sediment	dry weight	0.681 mg/kg
dimethyl ether	marine water sediment	dry weight	0.069 mg/kg
dimethyl ether	soil	dry weight	0.045 mg/kg

8.2 Exposure controls

Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes. Do not breathe vapours/aerosols. Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation.

Structural measures to prevent exposure

No information.

Organisational measures to prevent exposure

If this product contains ingredients with exposure limits, personal, workplace atmosphere monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protection.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration.

Personal protective equipment

Eye and face protection

Safety glasses with side protection (EN ISO 16321-1:2022).

Hand protection

Protective gloves (BS EN ISO 374). The product consists of various substances, therefore the resistance of gloves can not be calculated and has to be tested before use.

Appropriate materials

Skin protection

Cotton protective clothing and shoes that cover the entire foot (BS EN ISO 20345:2022). Protective antistatic clothing BS EN 1149 (1:2006, 2:1997 and 3:2004, 5:2018), protective antistatic shoes (BS EN ISO 20345:2022). Choose body protection according to the activity and possible exposure.

Respiratory protection

In case of insufficient ventilation wear suitable respiratory protection. If the concentration limit values are exceeded, it is necessary to wear appropriate respiratory protection. Wear suitable protective breathing mask (BS EN 136) with filter A2-P2 (BS EN 14387). For dust/gas/ vapor concentrations above the applicable filter limit, in case of oxygen concentrations below 17% or in vague conditions, autonomous self-contained breathing apparatus should be used, according to standard BS EN 137, BS EN 138.

Thermal hazards

No information.

Environmental exposure controls**Substance/mixture related measures to prevent exposure**

No information.

Instruction measures to prevent exposure

No information.

Organisational measures to prevent exposure

No information.

Technical measures to prevent exposure

Prevent release into in the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state

liquid - aerosol

Colour

black

Odour

No information.

Important health, safety and environmental information

Odour threshold	No information.
Melting point/Freezing point	No information.
Boiling point or initial boiling point and boiling range	No information.
Flammability	No information.
Lower and upper explosion limit	3.3 — 26.2 vol %
Flash point	No information.
Auto-ignition temperature	No information.
Decomposition temperature	No information.
pH	No information.
Viscosity	No information.
Solubility	No information.
Partition coefficient	No information.
Vapour pressure	60 hPa at 20 °C 306 hPa at 50 °C
Density and/or relative density	Density: 0.9357 g/cm ³
Relative vapour density	No information.
Particle characteristics	No information.

9.2 OTHER INFORMATION

Explosive properties	No information.
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SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable under recommended transport or storage conditions.

10.2 Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3 Possibility of hazardous reactions

The product is stable under recommended storage and handling conditions.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not expose to heat and direct sunlight.

10.5 Incompatible materials

Oxidants.

10.6 Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released.

SECTION 11. TOXICOLOGICAL INFORMATION

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

(a) Acute toxicity

For components

Name	Exposure route	Type	Species	Time	value	Method	Remark
dimethyl ether	Inhalation (gases)	LC ₅₀	rat	4 h	309 mg/l	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	oral	LD ₅₀	rat	/	> 5840 mg/kg bw	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	dermal	LD ₅₀	rat	/	> 2920 mg/kg	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	inhalation	LC ₅₀	rat	4 h	> 23.3 mg/l	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	dermal	LD ₅₀	rat	24 h	> 2920 mg/kg bw	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	inhalation (vapours)	LC ₅₀	rat	4 h	> 23300 mg/m ³	OECD 403	/
ethyl methyl ketone	oral	LD ₅₀	rat	/	> 2193 mg/kg	OECD 423	/

ethyl methyl ketone	dermal	LD ₅₀	rabbit	/	> 5000 mg/kg	OECD 402	/
ethyl methyl ketone	inhalation	LC ₅₀	rat	4 h	34 mg/l	/	/
ethyl acetate	oral	LD ₅₀	rabbit	/	4935 mg/kg	/	/
ethyl acetate	inhalation	LC ₅₀	rat	4 h	1600 mg/l	/	/
hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	oral	LD ₅₀	rat	/	> 5000 mg/kg	/	/
hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	dermal	LD ₅₀	rabbit	/	> 2800 mg/kg	/	/
hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	inhalation	LC ₅₀	rat	/	> 23.3 mg/l	/	/
cyclohexane	oral	LD ₅₀	rat	/	12705 mg/kg	/	/
cyclohexane	inhalation	LC ₅₀	rabbit	/	89600 mg/l	/	/
hydrocarbons, C9, aromatics	oral	LD ₅₀	rat	/	3592 mg/kg	/	/
hydrocarbons, C9, aromatics	dermal	LD ₅₀	rabbit	/	> 3160 mg/kg	/	/
hydrocarbons, C9, aromatics	inhalation	LC ₅₀	rat	4 h	> 6193 mg/l	/	/
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	oral	LD ₅₀	rat	/	> 5840 mg/kg	/	/
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	dermal	LD ₅₀	rabbit	/	> 2920 mg/kg	/	/
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	inhalation	LC ₅₀	rat	4 h	> 25.2 mg/l	/	/

(b) Skin corrosion/irritation

For components

Name	Species	Time	result	Method	Remark
dimethyl ether	/	/	May cause frostbite.	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	/	/	Irritating.	/	/
ethyl methyl ketone	rabbit	/	No irritant effect.	OECD 404	Repeated exposure may cause skin dryness or cracking.

Additional information

Causes skin irritation.

(c) Serious eye damage/irritation

For components

Name	Exposure route	Species	Time	result	Method	Remark
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	/	/	/	Not classified.	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	/	/	/	Contact with eyes may cause irritation.	/	/
ethyl methyl ketone	/	rabbit	/	Irritating.	OECD 405	/

Additional information

Causes serious eye irritation.

(d) Respiratory or skin sensitisation

For components

Name	Exposure route	Species	Time	result	Method	Remark
ethyl methyl ketone	dermal	guinea pig	/	Non sensitising.	OECD 406	Buehler test

(e) (Germ cell) mutagenicity

For components

Name	Type	Species	Time	result	Method	Remark
dimethyl ether	/	/	/	The chemical is not classified as mutagenic.	/	/
dimethyl ether	in-vitro mutagenicity	/	/	Negative.	OECD 471	Ames test
dimethyl ether	in-vitro mutagenicity	Human (lymphocytes)	/	Negative.	cytogenetic test	OECD 473
dimethyl ether	in-vivo mutagenicity	<i>Drosophila melanogaster</i>	/	Negative.	OECD 477	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Genotoxicity	/	/	Negative.	/	/
ethyl methyl ketone	in-vitro mutagenicity	/	/	Negative.	/	/
ethyl methyl ketone	in-vivo mutagenicity	/	/	Negative.	/	/
ethyl methyl ketone	in-vitro mutagenicity	rat	/	Negative.	OECD 473	DNA test on rat hepatocytes
ethyl methyl ketone	in-vitro mutagenicity	mouse (lymphoma cells)	/	Negative.	OECD 476	/
ethyl methyl ketone	in-vitro mutagenicity	Salmonella typhimurium	/	Negative.	OECD 471	/
ethyl methyl ketone	in-vivo mutagenicity	mouse	/	Negative.	OECD 474	/

(f) Carcinogenicity

For components

Name	Exposure route	Type	Species	Time	value	result	Method	Remark
dimethyl ether	/	/	/	/	/	Substance is not classified as carcinogenic.	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	/	/	/	/	/	Substance is not classified as carcinogenic.	/	/
ethyl methyl ketone	/	/	/	/	/	Not expected to be carcinogenic.	/	/

(g) Reproductive toxicity

For components

Name	Reproductive toxicity type	Type	Species	Time	value	result	Method	Remark
dimethyl ether	Reproductive toxicity	inhalation	rat	/	47 mg/L	Animal testing did not show any effects on fertility.	OECD 452	/
dimethyl ether	Maternal toxicity	NOAEL	rat	/	5000 ppm	/	/	Inhalation
dimethyl ether	Teratogenicity	NOAEL	rat	/	40000 ppm	/	/	Inhalation
dimethyl ether	Developmental toxicity	NOAEL	rat	/	40000 ppm	/	/	Inhalation
dimethyl ether	-	NOAEL	rat	/	20000 ppm	/	OECD 414	inhalation (vapor), embryo-fetal development

hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Reproductive toxicity	-	rat	/	/		The results of animal studies gave no indication of a fertility impairing effect.	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Developmental toxicity	/	rat	/	/		Did not show teratogenic effects in animal experiments.	/	/
ethyl methyl ketone	Teratogenicity	/	/	/	/		Tests on animals have shown no effects on the fetus.	/	/
ethyl methyl ketone	/	/	/	/	/		Reproductive toxicity is not expected.	/	/
ethyl methyl ketone	Teratogenicity	NOAEC	rat	18 days	1002 ppm		It does not meet the criteria for classification.	OECD 414	7 h per day
ethyl methyl ketone	Teratogenicity	LOAEC	rat	18 days	3000 ppm		Decrease in body weight	OECD 414	7 h per day
n-hexane	Reproductive toxicity	-	/	/	/		Suspected of damaging fertility.	/	/

Summary of evaluation of the CMR properties

No information.

(h) STOT-single exposure

For components

Name	Exposure route	Type	Species	Time	Exposure	organ	value	result	Method	Remark
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	inhalation	-	/	/	/	/	/	May cause effects on the central nervous system.	/	high vapours concentrations
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	inhalation	-	/	/	/	/	/	Symptoms: nausea, unconsciousness.	/	high vapours concentrations
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	inhalation	-	/	/	/	/	/	Symptoms: mucous membrane irritation.	/	high vapours concentrations
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	inhalation	-	/	/	/	/	/	May cause respiratory irritation.	/	high vapours concentrations
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	oral	-	/	/	/	/	/	May cause irritation of the digestive tract.	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	-	-	/	/	/	/	/	May cause drowsiness or dizziness.	/	/
ethyl methyl ketone	inhalation	-	/	/	/	central nervous system	/	May cause drowsiness or dizziness.	/	/

Additional information

May cause drowsiness or dizziness.

(i) STOT-repeated exposure

For components

Name	Exposure route	Type	Species	Time	Exposure	organ	value	result	Method	Remark
dimethyl ether	Repeated dose toxicity	NOEL	rat	2 years	/	/	47 mg/L	/	OECD 452	inhalation
ethyl methyl ketone	Repeated dose toxicity	NOAEC	rat	4 months	/	/	5041 ppm	Repeated exposure: no effects.	OECD 413	inhalation (vapours); 6 h per day
ethyl methyl ketone	inhalation	-	/	/	/	/	/	Exposure to high concentrations of vapours may cause headaches, dizziness and nausea.	/	/
ethyl methyl ketone	dermal	-	/	/	/	/	/	Repeated or prolonged exposure may cause dermatitis.	/	/

(j) Aspiration hazard

For components

Name	result	Method	Remark
dimethyl ether	Aspiration hazard: Not Classified.	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	Aspiration into the lungs can cause lung damage.	/	The exposed person should be kept under medical surveillance for 48 hours.
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	May be fatal if swallowed and enters airways.	/	/
ethyl methyl ketone	Aspiration hazard: Not Classified.	/	/

Additional information

May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

No information.

Interactive effects

No information.

11.2 Information on other hazards

Endocrine disrupting properties

No information.

Other information

No information.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute (short-term) toxicity

For components

Name	Type	value	Exposure time	Species	organism	Method	Remark
dimethyl ether	LC ₅₀	> 4.1 mg/L	96 h	fish	<i>Poecilia reticulata</i>	/	Semi-Static system
dimethyl ether	EC ₅₀	> 4.4 mg/L	48 h	crustacea	<i>Daphnia magna</i>	/	static test

dimethyl ether	LC ₅₀	755.5 mg/L	48 h	<i>Daphnia</i>	/	ECOSAR	/
dimethyl ether	EC ₅₀	154.9 mg/L	96 h	algae	/	ECOSAR	/
dimethyl ether	EC ₁₀	> 1600 mg/L	/	bacteria	<i>Pseudomonas putida</i>	/	static test
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	EL ₅₀	10 - 30 mg/L	72 h	algae	<i>Selenastrum capricornutum</i>	/	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	ErL ₅₀	10 - 30 mg/L	72 h	algae	<i>Pseudokirchneriella subcapitata</i>	OECD 201	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	EbL ₅₀	10 - 30 mg/L	72 h	algae	<i>Pseudokirchneriella subcapitata</i>	OECD 201	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	EL ₅₀	3 mg/L	48 h	crustacea	<i>Daphnia magna</i>	OECD 202	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	LL ₅₀	> 13.4 mg/L	96 h	fish	<i>Oncorhynchus mykiss</i>	OECD 203	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	NOELR	6.3 mg/L	72 h	<i>Pseudokirchneriella subcapitata</i>	/	OECD 201	/
ethyl methyl ketone	LC ₅₀	2993 mg/L	96 h	fish	<i>Pimephales promelas</i>	OECD 203	static test
ethyl methyl ketone	EC ₅₀	308 mg/L	48 h	crustacea	<i>Daphnia magna</i>	OECD 202	static test
ethyl methyl ketone	EC ₅₀	1972 mg/L	72 h	algae	<i>Pseudokirchneriella subcapitata</i>	OECD 201	static test
ethyl methyl ketone	EC ₀	1150 mg/L	16 h	bacteria	<i>Pseudomonas putida</i>	DIN 38412	static test
hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	EL ₅₀	3 mg/L	48 h	crustacea	<i>Daphnia magna</i>	/	/
hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	EL ₅₀	10 - 30 mg/L	72 h	algae	<i>Selenastrum capricornutum</i>	/	/
hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	LL ₅₀	> 13.4 mg/L	96 h	fish	<i>Oncorhynchus mykiss</i>	/	/
hydrocarbons, C9, aromatics	EC ₅₀	7.4 mg/L	48 h	crustacea	<i>Daphnia magna</i>	/	/
hydrocarbons, C9, aromatics	EL ₅₀	3.2 mg/L	48 h	crustacea	<i>Daphnia magna</i>	/	/
hydrocarbons, C9, aromatics	EL ₅₀	2.9 mg/L	72 h	algae	<i>Selenastrum capricornutum</i>	/	/
hydrocarbons, C9, aromatics	LL ₅₀	9.2 mg/L	96 h	fish	<i>Oncorhynchus mykiss</i>	/	/
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	EC ₅₀	10 mg/L	48 h	algae	Phaeophyta	/	/
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	EL ₅₀	3 mg/L	48 h	crustacea	<i>Daphnia magna</i>	/	/

hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	EL ₅₀	30 - 100 mg/L	72 h	algae	<i>Selenastrum capricornutum</i>	/	/
hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	LL ₅₀	11.4 mg/L	96 h	fish	<i>Oncorhynchus mykiss</i>	/	/

Chronic (long-term) toxicity

For components

Name	Type	value	Exposure time	Species	organism	Method	Remark
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	NOELR	1 mg/l	21 days	crustacea	<i>Daphnia magna</i>	OECD 211	/
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	NOELR	1.53 mg/l	28 days	fish	<i>Oncorhynchus mykiss</i>	/	QSAR Petrotox

12.2 Persistence and degradability

Abiotic degradation, physical- and photo-chemical elimination

For components

Name	Environment	Type / Method	Half Time	Evaluation	Method	Remark
ethyl methyl ketone	water	hydrolysis	/	not expected	/	/
ethyl methyl ketone	Air	photodegradation	/	Photolysis not expected	/	/

Biodegradation

For components

Name	Type	Rate	Time	Evaluation	Method	Remark
dimethyl ether	aerobic	5 %	28 days	not readily biodegradable	OECD 301 D	activated sludge
hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	biodegradability	98 %	28 days	readily biodegradable	OECD 301F	/
ethyl methyl ketone	biodegradability	98 %	28 days	readily biodegradable	OECD 301 D	/

12.3 Bioaccumulative potential

Partition coefficient

For components

Name	Media	value	Temperature °C	pH	Concentration	Method
ethyl methyl ketone	Log Pow	0.3	40	/	/	/

Bioconcentration factor (BCF)

No information.

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

No information.

Surface tension

For components

Name	value	Temperature °C	Concentration	Method	Remark
ethyl methyl ketone	24.8 mN/m	20	/	/	/

Adsorption/Desorption**For components**

Name	Type	Criterion	value	Evaluation	Method	Remark
dimethyl ether	Soil	/	/	Moderate mobility in soil.	/	/
ethyl methyl ketone	Water	/	/	Partially soluble.	/	/

12.5 Results of PBT and vPvB assessment

No evaluation.

12.6 Endocrine disrupting properties

No information.

12.7 Other adverse effects

No information.

12.8 Additional information**For product**

Toxic to aquatic life with long lasting effects. Water hazard class (WGK): 3 (Self-assessment), very hazardous for water. Avoid release to the environment.

For components**dimethyl ether**

Bioaccumulation is not expected. This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

ethyl methyl ketone

Does not bioaccumulate. Mobile in soil. This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Do not allow to reach ground water, water bodies or sewage systems.

SECTION 13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product / Packaging disposal****Waste chemical**

Avoid release to the environment. Product and container must be disposed of safely. Dispose of in accordance with applicable waste disposal regulation. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste.

Waste codes / waste designations according to LoW

16 05 04* - gases in pressure containers (including halons) containing dangerous substances

Packaging

Uncleaned containers should not be perforated, cut or welded. Pressurized container. Do not pierce or burn, even after use. Dispose of in accordance with applicable waste disposal regulation. Deliver completely emptied containers to approved waste disposal authorities.

Waste codes / waste designations according to LoW

15 01 11* - metallic packaging containing a dangerous solid porous matrix (for example asbestos), including empty pressure containers

Waste treatment-relevant information

No information.

Sewage disposal-relevant information

No information.

Other disposal recommendations

No information.

SECTION 14. TRANSPORT INFORMATION

ADR/RID	IMDG	IATA	ADN
14.1 UN number or ID number			
UN 1950	UN 1950	UN 1950	UN 1950
14.2 UN proper shipping name			
AEROSOLS	AEROSOLS (cyclohexane)	AEROSOLS	AEROSOLS
14.3 Transport hazard class(es)			
2	2	2	2
14.4 Packing group			
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable
14.5 Environmental hazards			
YES	Marine pollutant	YES	YES
14.6 Special precautions for user			
Limited quantities 1 L Special provisions 190, 327, 344, 625 Packing Instructions P207, LP200 Special packing provisions PP87, RR6, L2 Transport category 2 Tunnel restriction code (D) Classification code 5F	Limited quantities 1 L EmS F-D, S-U	Limited Quantity, Packing Instructions (Ltd Qty, Pkg Inst) Y203 Limited Quantity, Maximum Net Quantity/Package (Ltd Qty, Max Net Qty/Pkg) 30 kg G Packing Instructions (Pkg Inst) 203 Maximum Net Quantity/Package (Max Net Qty/Pkg) 25 kg Special provisions A145, A167, A802	Limited quantities 1 L
14.7 Maritime transport in bulk according to IMO instruments			

	Goods may not be carried in bulk in bulk containers, containers or vehicles.		

SECTION 15. REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)
not applicable

Ingredients according to Regulation (EC) No 648/2004 on detergents
No information.

Special instructions
No information.

15.2 Chemical Safety Assessment

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

SECTION 16. OTHER INFORMATION

Indication of changes

2.2 Label elements

Key literature references and sources for data

No information.

Abbreviations and acronyms

ATE - Acute Toxicity Estimate

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

CEN - European Committee for Standardisation

C&L - Classification and Labelling

CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CAS# - Chemical Abstracts Service number

CMR - Carcinogen, Mutagen, or Reproductive Toxicant

CSA - Chemical Safety Assessment

CSR - Chemical Safety Report

DMEL - Derived Minimal Effect Level

DNEL - Derived No Effect Level

DPD - Dangerous Preparations Directive 1999/45/EC

DSD - Dangerous Substances Directive 67/548/EEC

DU - Downstream User

EC - European Community

ECHA - European Chemicals Agency

EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)

EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)

EEC - European Economic Community

EINECS - European Inventory of Existing Commercial Substances

ELINCS - European List of notified Chemical Substances

EN - European Standard

EQS - Environmental Quality Standard

EU - European Union

Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

List of relevant H phrases

H220 Extremely flammable gas.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.