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

Product name: Smoke Detector Test Spray

Creation date: 01.06.2022, **Revision:** 30.05.2023, **version:** 1.0

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

1.1 Product identifier

Product name

Smoke Detector Test Spray

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

Relevant identified uses

Smoking test spray.

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

112

+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.
Eye Irrit. 2; H319 Causes serious eye irritation.
STOT SE 3; H336 May cause drowsiness or dizziness.
Aquatic Chronic 3; H412 Harmful 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.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.
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.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P410 + P412 Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122°F.

Contains:
Pentane
propan-2-ol

2.3 Other hazards

PBT/vPvB
No information.

Endocrine disrupting properties
No information.

Additional information
Vapors can form an explosive mixture with air. 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

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
isobutane	75-28-5 200-857-2 - 01-2119485395-27	25-50	Flam. Gas 1; H220 Press. Gas; H280	/	/
propane	74-98-6 200-827-9 - 01-2119485394-21	10-25	Flam. Gas 1; H220 Press. Gas; H280	/	/

Pentane	109-66-0 203-692-4 601-006-00-1 01-2119459286-30	10- < 25	Flam. Liq. 2; H225 Asp. Tox. 1; H304 STOT SE 3; H336 Aquatic Chronic 2; H411 EUH066	/	/
propan-2-ol	67-63-0 200-661-7 603-117-00-0 01-2119457558-25	10-25	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336	/	/
Ethanol	64-17-5 200-578-6 603-002-00-5 01-2119457610-43	2,5-10	Flam. Liq. 2; H225	/	/
tert-butyl alcohol	75-65-0 200-889-7 603-005-00-1 01-2119444321-51	<1	Flam. Liq. 2; H225 Eye Irrit. 2; H319 Acute Tox. 4; H332 STOT SE 3; H335	/	/

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. Person giving first aid should properly protect himself. No action shall be taken involving any personal risk or without suitable training. When it is suspected, that there may still be harmful vapours/fumes present in the air, respiratory protection (mask; self contained breathing apparatus) must be used.

Following inhalation

Remove patient to fresh air - move out of dangerous area. If symptoms occur, seek medical advice. 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. Wash affected skin areas immediately with plenty of 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. Symptoms include: headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, unconsciousness. Vomiting. Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation. Coughing, sneezing, nasal discharge, labored breathing.

Following skin contact

Contact with skin may cause irritation (redness, itching). Repeated exposure may cause dry skin or cracked skin.

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. Central nervous system: Signs/symptoms can include headache, dizziness, drowsiness, lack of coordination, slowed reaction time, seasickness, slurred speech, giddiness and unconsciousness.

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.
Alcohol-resistant foam.
Carbon dioxide (CO_2). Dry chemical powder.

Unsuitable extinguishing media

Full water jet.

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 (CO_2).

5.3 Advice for firefighters

Protective actions

No action shall be taken involving any personal risk or without suitable training. 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. Prolonged heating can cause an explosion. Vapours can form explosive mixtures with air.

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 extinguishing agents 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

The product is an aerosol, which is why leakage of large amounts of product is not expected. 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

Use spark-proof tools. 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 tempratures exceeding 50°C. Do not pierce or burn, even after use. Do not spray on a naked flame or incandescent material. Ensure proper grounding of the equipment. Uncleaned containers should not be perforated, cut or welded.

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

Consider measures required in Section 8 of this safety data sheet. 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.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in accordance with local regulations. Keep away from food, drink and animal feeding stuffs. Follow safe storage practices for packed compressed gas as described by the Compressed Gas Association or the relevant agency in the country where the product is used. 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 self-igniting materials. Store away from strong acids. Keep away from halogens. Do not store together with aldehyde.

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
Pentane (109-66-0)	1800	600	/	/	/	/
2-Methylpropan-2-ol (75-65-0)	308	100	462	150	/	/
Ethanol (64-17-5)	1920	1000	/	/	/	/
Propan-2-ol (67-63-0)	999	400	1250	500	/	/

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
Pentane	Worker	inhalation	long term systemic effects	/	3000 mg/m³
Pentane	Worker	dermal	long term systemic effects	/	432 mg/kg bw/day
Pentane	Consumer	inhalation	long term systemic effects	/	643 mg/m³
Pentane	Consumer	dermal	long term systemic effects	/	214 mg/kg bw/day
Pentane	Consumer	oral	long term systemic effects	/	214 mg/kg bw/day
propan-2-ol	Worker	inhalation	long term systemic effects	/	500 mg/m³
propan-2-ol	Worker	dermal	long term systemic effects	/	888 mg/kg bw/day
propan-2-ol	Consumer	inhalation	long term systemic effects	/	89 mg/m³
propan-2-ol	Consumer	dermal	long term systemic effects	/	319 mg/kg bw/day
propan-2-ol	Consumer	oral	long term systemic effects	/	26 mg/kg bw/day
Ethanol	Worker	inhalation	long term systemic effects	/	950 mg/m³
Ethanol	Worker	dermal	long term systemic effects	/	343 mg/kg bw/day
Ethanol	Consumer	inhalation	long term systemic effects	/	114 mg/m³

Ethanol	Consumer	dermal	long term systemic effects	/	206 mg/kg bw/day
Ethanol	Consumer	oral	long term systemic effects	/	87 mg/kg bw/day

PNEC values

For product

No information.

For components

Name	Exposure route	Remark	value
Pentane	fresh water	/	230 µg/l
Pentane	water, intermittent release	fresh water	880 µg/l
Pentane	marine water	/	230 µg/l
Pentane	water treatment plant	/	3600 µg/l
Pentane	fresh water sediment	dry weight	1.2 mg/kg
Pentane	marine water sediment	dry weight	1.2 mg/kg
Pentane	soil	dry weight	0.55 mg/kg
propan-2-ol	fresh water	/	140.9 mg/L
propan-2-ol	water, intermittent release	/	140.9 mg/L
propan-2-ol	marine water	/	140.9 mg/L
propan-2-ol	water treatment plant	/	2251 mg/L
propan-2-ol	fresh water sediment	dry weight	552 mg/kg
propan-2-ol	marine water sediment	dry weight	552 mg/kg
propan-2-ol	soil	dry weight	28 mg/kg
propan-2-ol	secondary poisoning	food	160 mg/kg
Ethanol	fresh water	/	0.96 mg/L
Ethanol	water, intermittent release	fresh water	2.75 mg/L
Ethanol	marine water	/	0.79 mg/L
Ethanol	water treatment plant	/	580 mg/L
Ethanol	fresh water sediment	dry weight	3.6 mg/kg
Ethanol	marine water sediment	dry weight	2.9 mg/kg
Ethanol	soil	dry weight	0.63 mg/kg
Ethanol	food chain	oral	0.38 g/kg food

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. Keep away from foodstuffs, beverages and feed. 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 (BS EN ISO 16321-1:2022).

Hand protection

Protective gloves (BS EN ISO 374). The product is a preparation of several substances, the resistance of glove materials cannot be predicted and must therefore be checked before use. Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Appropriate materials

Material	Thickness	Penetration Time	Remark
Nitrile	≥ 0.35 mm	≥ 8 h	BS EN ISO 374
Fluorinated rubber	≥ 0.34 mm	≥ 8 h	BS EN ISO 374

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). Protective work clothing resistant to liquid chemicals (BS EN 14605:2005+A1:2009). 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

Implement measures to protect the environment.

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

colourless

Odour

characteristic

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	1.4 — 19 vol %
Flash point	No information.
Auto-ignition temperature	No information.
Decomposition temperature	No information.
pH	substance/mixture is non-soluble (in water)
Viscosity	No information.
Solubility	Water: insoluble

Partition coefficient	No information.
Vapour pressure	4.1 hPa
Density and/or relative density	Density: 0.728 g/cm^3 (data refers to the liquid portion of the product)
Relative vapour density	No information.
Particle characteristics	No information.

9.2 OTHER INFORMATION

Weight organic solvents	592 g/l (VOC) 99.5 % (VOC)
Explosive properties	Product is not explosive. However, formation of explosive air/ vapour mixtures are possible.

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

Vapours and air can form flammable or explosive mixtures. 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. Take precautionary measures against static discharges.

10.5 Incompatible materials

Oxidants.
Strong acids. Halogens. Halogenated compounds. Aldehydes.

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. Hazardous combustion products, see Section 5 of the safety data sheet.

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
Pentane	oral	LD_{50}	rat	/	> 2000 mg/kg	OECD 401	/
Pentane	inhalation	LC_{50}	rat	4 h	364 mg/l	/	/
Pentane	inhalation	LC_{50}	mouse	2 h	295 mg/l	/	/
propan-2-ol	oral	LD_{50}	rat	/	> 2000 mg/kg	/	/
propan-2-ol	inhalation	LC_{50}	rat	4 h	> 20 mg/l	/	/
propan-2-ol	dermal	LD_{50}	rabbit	/	> 2000 mg/kg	/	/
Ethanol	inhalation	LD_{50}	rat	/	> 8000 mg/kg	/	/
Ethanol	dermal	LD_{50}	rabbit	/	> 20000 mg/kg	/	/
Ethanol	oral	LD_{50}	rat	/	6200 mg/kg	/	/

Additional information

Based on available data, the classification criteria are not met.

(b) Skin corrosion/irritation

For components

Name	Species	Time	result	Method	Remark
Pentane	rabbit	/	Non-irritant.	OECD 404	/
propan-2-ol	/	/	Non-irritant.	/	/

Additional information

Based on available data, the classification criteria are not met.

(c) Serious eye damage/irritation

For components

Name	Exposure route	Species	Time	result	Method	Remark
Pentane	/	rabbit	/	Non-irritant.	OECD 405	/
propan-2-ol	/	/	/	Irritating.	/	/
Ethanol	/	/	/	High concentrations of vapours may cause eye irritation.	/	/

Additional information

Causes serious eye irritation.

(d) Respiratory or skin sensitisation

For components

Name	Exposure route	Species	Time	result	Method	Remark
Pentane	/	guinea pig	/	Non sensitising.	OECD 406	/
propan-2-ol	dermal	guinea pig	/	Negative.	/	/

Additional information

Based on the available data does not meet the criteria for classification.

(e) (Germ cell) mutagenicity

For product

Type	Species	Time	result	Method	Remark
/	/	/	Based on the available data does not meet the criteria for classification.	/	/

For components

Name	Type	Species	Time	result	Method	Remark
Pentane	in-vivo mutagenicity	/	/	Negative.	/	/
Pentane	in-vitro mutagenicity	/	/	Negative.	/	/

(f) Carcinogenicity

For product

Exposure route	Type	Species	Time	value	result	Method	Remark

/	/	/	/	/	Based on the available data does not meet the criteria for classification.	/	/

(g) Reproductive toxicity

For product

Reproductive toxicity type	Type	Species	Time	value	result	Method	Remark
/	/	/	/	/	Based on the available data does not meet the criteria for classification.	/	/

Summary of evaluation of the CMR properties

The product is not classified as carcinogenic, mutagenic or toxic for reproduction.

(h) STOT-single exposure

For components

Name	Exposure route	Type	Species	Time	Exposure	organ	value	result	Method	Remark
propan-2-ol	inhalation	-	/	/	/	/	/	Symptoms: drowsiness, headaches, dizziness.	/	/
Ethanol	inhalation	/	/	/	/	/	/	High concentrations of steam can cause a burning sensation in the nose and throat and sharp pain in the eyes. In severe cases fainting, dizziness and vomiting may occur.	/	/
Ethanol	dermal	-	/	/	/	/	/	Irritating. The substance dries out the skin.	/	/
Ethanol	oral	/	/	/	/	/	/	It can cause dizziness, confusion, reduced reactions, euphoria, nausea, lack of coordination, vomiting and loss of consciousness and coma.	/	/

Additional information

May cause drowsiness or dizziness.

(i) STOT-repeated exposure

No information.

Additional information

Repeated exposure may cause skin dryness or cracking. STOT RE - repeated exposure: Based on available data, the classification criteria are not met. STOT RE - repeated exposure: Based on available data, the classification criteria are not met.

(j) Aspiration hazard

No information.

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
Pentane	LC_{50}	4.26 mg/L	96 h	fish	*Oncorhynchus mykiss*	OECD 203	/
Pentane	EC_{50}	9.74 mg/L	48 h	crustacea	*Daphnia magna*	/	/
Pentane	EC_{50}	10.7 mg/L	72 h	algae	*Scenedesmus capricornutum*	OECD 201	static system
propan-2-ol	$LC/EC/IC_{50}$	100 - 1000 mg/L	/	fish	/	/	/
propan-2-ol	$LC/EC/IC_{50}$	> 1000 mg/L	/	invertebrates	/	/	/
propan-2-ol	$LC/EC/IC_{50}$	> 1000 mg/L	/	algae	/	/	/
Ethanol	LC_{50}	8140 mg/L	48 h	fish	/	/	/
Ethanol	EC_{50}	9268 - 14221 mg/L	48 h	crustacea	*Daphnia magna*	/	/
Ethanol	EC_5	65 mg/L	72 h	bacteria	/	/	/
isopropanol	EC_{50}	> 100 mg/L	48 h	crustacea	*Daphnia magna*	/	/
isopropanol	LC50	> 100 mg/L	48 h	fish	/	/	/

Chronic (long-term) toxicity

For components

Name	Type	value	Exposure time	Species	organism	Method	Remark
Ethanol	IC_5	5000 mg/l	7 days	algae	/	/	/

12.2 Persistence and degradability

Abiotic degradation, physical- and photo-chemical elimination

No information.

Biodegradation

For components

Name	Type	Rate	Time	Evaluation	Method	Remark
Pentane	aerobic	87 %	/	readily biodegradable	OECD 301F	/
propan-2-ol	biodegradability	84 %	28 days	readily biodegradable	/	closed cup

Ethanol	BOD (% ThOD)	84 %	20 days	/	/	/
Ethanol	ThOD	2.1 mg O_2/mg	20 days	/	/	/
Ethanol	COD	1.99 mg O_2/mg	/	/	/	/

12.3 Bioaccumulative potential

Partition coefficient

For components

Name	Media	value	Temperature °C	pH	Concentration	Method
Pentane	octanol-water (log Kow)	3.39	/	/	/	/
propan-2-ol	Octanol-water (log Pow)	0.05	/	/	/	/
Ethanol	octanol-water (log Kow)	0.3	/	/	/	/

Bioconcentration factor (BCF)

For components

Name	Species	organism	value	Duration	Evaluation	Method	Remark
Pentane	BCF	/	171	/	/	/	QSAR

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
Pentane	15.49 mN/m	25	/	/	/

Adsorption/Desorption

No information.

12.5 Results of PBT and vPvB assessment

The product does not contain any PBT or vPvB substances in percentages greater than 0.1%.

12.6 Endocrine disrupting properties

No information.

12.7 Other adverse effects

No information.

12.8 Additional information

For product

Harmful to aquatic life with long lasting effects. Water hazard class 2 (self-assessment): hazardous for water. Avoid release to the environment.

For components

propan-2-ol

Bioaccumulation is not expected. Soluble in water. Spillages may penetrate the soil causing ground water contamination.

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	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			
NO	NO	NO	NO
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)	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
Seveso III, P3a: flammable aerosols. Water hazard class 2 (self-assessment): hazardous for water.

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
9.1 Information on basic physical and chemical properties 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.