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Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

* 1.1. Product identifier

Trade name/designation:

RAVENOL Ketten-Spray

Article No.:

1360032

UFI:

J2XM-VYEQ-6X5W-D1V2

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

Use of the substance/mixture:

Technical Spray

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Ravensberger Schmierstoffvertrieb GmbH

Produktsicherheit

Jöllenbecker Str. 2

33824 Werther

Germany

Telephone: +49 5203 9719 0

Telefax: +49 5203 9719 40

E-mail: kontakt@ravenol.de

Website: www.ravenol.de

E-mail (competent person): sdb@ravenol.de

1.4. Emergency telephone number

24 hr. emergency phone number, 24h: +49 700 24 112 112 (Contract ID: RAV) / +1 872 5888271
(Contract ID: RAV)

SECTION 2: Hazards identification

* 2.1. Classification of the substance or mixture

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols (<i>Aerosol 1</i>)	H222; H229: Extremely flammable aerosol. Pressurised container: May burst if heated.	On basis of test data.
Skin corrosion/irritation (<i>Skin Irrit. 2</i>)	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>)	H319: Causes serious eye irritation.	Calculation method.
STOT-single exposure (<i>STOT SE 3</i>)	H336: May cause drowsiness or dizziness.	Calculation method.
Hazardous to the aquatic environment (<i>Aquatic Chronic 3</i>)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.



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* **2.2. Label elements**

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

Hazard pictograms:



GHS02
Flame



GHS07
Exclamation mark

Signal word: Danger

Hazard components for labelling:

hydrocarbons C7-C9, isoalkanes; Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts

Hazard statements for physical hazards	
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.

Hazard statements for health hazards	
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Hazard statements for environmental hazards	
H412	Harmful to aquatic life with long lasting effects.

Supplemental hazard information	
EUH208	Contains Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts. May produce an allergic reaction.

Precautionary statements	
P102	Keep out of reach of children.

Precautionary statements Prevention	
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.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection/face protection.

Precautionary statements Response	
P312	Call a POISON CENTER/doctor/Emergency telephone number if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Precautionary statements Storage	
P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Precautionary statements Disposal	
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

2.3. Other hazards

Other adverse effects:

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.



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SECTION 3: Composition/information on ingredients

* 3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 75-28-5 EC No.: 200-857-2 Index No.: 601-004-00-0 REACH No.: 01-2119485395-27	isobutane Flam. Gas 1A (H220), Press. Gas (Liq.) (H280) Danger	50 - < 100 Vol-%
CAS No.: 74-98-6 EC No.: 200-827-9 Index No.: 601-003-00-5 REACH No.: 01-2119486944-21	propane Flam. Gas 1A (H220), Press. Gas (Liq.) (H280) Danger Acute Toxicity Estimate ATE (inhalation, gases) 520,400 ppmV	10 - < 20 Vol-%
CAS No.: 64741-66-8 EC No.: 921-728-3	hydrocarbons C7-C9, isoalkanes Aquatic Chronic 2 (H411), Asp. Tox. 1 (H304), Flam. Liq. 2 (H225), STOT SE 3 (H336), Skin Irrit. 2 (H315) Danger Acute Toxicity Estimate ATE (oral) > 5,000 mg/kg ATE (dermal) > 2,200 - 2,500 mg/kg ATE (inhalation, vapour) 17.3 - 22.2 mg/L ATE (inhalation, dust/mist) > 9.4 mg/L	10 - < 20 Vol-%
CAS No.: 68037-01-4 EC No.: 500-183-1 REACH No.: 01-2119486452-34	1-decene, homopolymer, hydrogenated Asp. Tox. 1 (H304) Danger Acute Toxicity Estimate ATE (oral) > 5,000 mg/kg ATE (dermal) > 2,000 mg/kg ATE (inhalation, dust/mist) > 5 mg/L	5 - < 10 Vol-%
CAS No.: 106-97-8 EC No.: 203-448-7 Index No.: 601-004-00-0 REACH No.: 01-2119474691-32	butane Flam. Gas 1A (H220), Press. Gas (Liq.) (H280) Danger Acute Toxicity Estimate ATE (inhalation, gases) 658 ppmV	1 - < 3 Vol-%
CAS No.: 97675-24-6 EC No.: 307-593-8	Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts Skin Sens. 1B (H317) Warning Acute Toxicity Estimate ATE (oral) > 2,000 mg/kg ATE (dermal) > 2,000 mg/kg	1 - < 3 Vol-%
CAS No.: 84989-14-0 EC No.: 284-903-7	Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts Acute Tox. 4 (H302), Aquatic Chronic 3 (H412), Eye Dam. 1 (H318), Skin Irrit. 2 (H315) Danger Acute Toxicity Estimate ATE (oral) ≥ 1,080 - ≤ 1,630 mg/kg ATE (dermal) > 2,000 mg/kg	0.1 - < 1 Vol-%

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

* 4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

Provide fresh air. Consult a doctor immediately in the case of inhaling spray mist and show him packing or label.



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In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

After eye contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Following ingestion:

Rinse mouth thoroughly with water. Do NOT induce vomiting. Consult a doctor immediately.

Self-protection of the first aider:

Use personal protection equipment. No direct artificial respiration to be given by first aider.

* **4.2. Most important symptoms and effects, both acute and delayed**

The following symptoms may occur: Headache, Dizziness, Nausea, fatigue, skin irritation

* **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:**

Co-ordinate fire-fighting measures to the fire surroundings.

Carbon dioxide (CO₂)

Extinguishing powder

alcohol resistant foam

Use water spray jet to protect personnel and to cool endangered containers.

Unsuitable extinguishing media:

Full water jet

5.2. Special hazards arising from the substance or mixture

Extremely flammable aerosol. Pressurized container: May burst if heated.

Hazardous combustion products:

Nitrogen oxides (NO_x), Carbon monoxide, Carbon dioxide (CO₂), aldehydes, carbon black, Gases/vapours, toxic

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

5.4. Additional information

Move undamaged containers from immediate hazard area if it can be done safely. Do not inhale explosion and combustion gases. Use water spray jet to protect personnel and to cool endangered containers.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel****Personal precautions:**

Use personal protection equipment. Do not breathe spray. Avoid contact with skin, eyes and clothes. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Protective equipment:

Personal protection equipment: see section 8

Emergency procedures:

Remove all sources of ignition. Remove persons to safety. Provide adequate ventilation.

6.1.2. For emergency responders**Personal protection equipment:**

Use appropriate respiratory protection.

* **6.2. Environmental precautions**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up**For containment:**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).



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For cleaning up:

Clean contaminated articles and floor according to the environmental legislation.

Other information:

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Pressurised container: May burst if heated. Do not pierce or burn, even after use. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. Do not breathe spray.

Wear personal protection equipment (refer to section 8). When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Do not put any product-impregnated cleaning rags into your trouser pockets. Use appropriate container to avoid environmental contamination.

Fire prevent measures:

Do not spray on naked flames or any incandescent material. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Keep away from sources of ignition - No smoking.

Measures to prevent aerosol and dust generation:

Use only in well-ventilated areas.

Environmental precautions:

Shafts and sewers must be protected from entry of the product.

Advices on general occupational hygiene

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Requirements for storage rooms and vessels:

Observe legal regulations and regulations.

Hints on storage assembly:

Do not store together with:

Oxidizing agent

Pyrophoric or self-heating substances

Food and feedingstuffs

Storage class (TRGS 510, Germany): 2B - Aerosol dispensers and lighters

Further information on storage conditions:

Protect against: Frost, UV-radiation/sunlight

maximum storage temperature: 50 °C

7.3. Specific end use(s)

Recommendation:

Observe technical data sheet.



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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
CH from 1 Jan 2024	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m ³) ② 3,200 ppm (7,600 mg/m ³)
HTP (FI)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m ³) ② 1,000 ppm (2,400 mg/m ³) ⑤ liite 4
MAK (AT)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	② 1,600 ppm (3,800 mg/m ³) ⑤ (max. 3x60 min./SchichtMomentanwert)
BE from 3 Oct 2018	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	② 980 ppm (2,370 mg/m ³)
EE	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m ³)
TSH (SK) from 1 May 2019	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 1,000 ppm (2,400 mg/m ³) ⑤ karc 1A
SI	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³)
KR from 20 Mar 2018	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm
BC (CA) from 1 Mar 2022	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	② 1,000 ppm ⑤ EX
IE from 21 Aug 2018	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	② 1,000 ppm
NIOSH (US)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m ³)
ACGIH (US) from 1 Jan 2017	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 1,000 ppm
TRGS 900 (DE)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³) ⑤ DFG
MAK (AT)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m ³)
CH from 1 Jan 2024	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³) ② 4,000 ppm (7,200 mg/m ³) ⑤ Messmeth: NIOSH
PL	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,800 mg/m ³
NO	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 500 ppm (900 mg/m ³)



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HTP (FI)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 800 ppm (1,500 mg/m ³) ② 1,100 ppm (2,000 mg/m ³) ⑤ liite 4
TRGS 900 (DE)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³) ② 4,000 ppm (7,200 mg/m ³) ⑤ DFG
BG	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,800 mg/m ³
DK	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³) ② 2,000 ppm (3,600 mg/m ³)
BE	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm
MAK (AT)	propane CAS No.: 74-98-6 EC No.: 200-827-9	② 2,000 ppm (3,600 mg/m ³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
RO	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 778 ppm (1,400 mg/m ³) ② 1,000 ppm (1,800 mg/m ³)
EE	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
Alberta (CA)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm
MAK (AT)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
SI	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³) ② 4,000 ppm (7,200 mg/m ³)
TW	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
IS	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
MY from 1 Jan 2000	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 2,500 ppm
GR from 1 Oct 2016	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
LV from 7 Apr 2015	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
IDLH (US) from 1 Jan 1994	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 2,100 ppm [10% LEL]
ES from 8 Jun 2023	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm
OSHA (US)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)



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NIOSH (US)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
MY from 1 Jan 2000	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)
CH from 1 Jan 2024	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³) ② 3,200 ppm (7,600 mg/m ³)
MAK (AT)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)
PL	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,900 mg/m ³ ② 3,000 mg/m ³
TRGS 900 (DE)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³) ⑤ DFG
NO	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 250 ppm (600 mg/m ³)
IE from 5 Dec 2011	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm
HTP (FI)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³) ② 1,000 ppm (2,400 mg/m ³) ⑤ liite 4
DK	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 500 ppm (1,200 mg/m ³) ② 1,000 ppm (2,400 mg/m ³)
MAK (AT)	butane CAS No.: 106-97-8 EC No.: 203-448-7	② 1,600 ppm (3,800 mg/m ³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
BG	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,900 mg/m ³
HR	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 600 ppm (1,450 mg/m ³) ② 750 ppm (1,810 mg/m ³) ⑤ Karc 1A, Muta 1B
BE from 3 Oct 2018	butane CAS No.: 106-97-8 EC No.: 203-448-7	② 980 ppm (2,370 mg/m ³)
EE	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,500 mg/m ³)
Alberta (CA) from 1 Jun 2018	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm
ES from 1 Jan 2015	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm
LV	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 300 mg/m ³
BC (CA) from 1 Jun 2018	butane CAS No.: 106-97-8 EC No.: 203-448-7	② 1,000 ppm ⑤ EX

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Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
TSH (SK) from 1 May 2019	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,400 mg/m ³) ⑤ karc 1A
VLA (FR)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)
WEL (GB)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 600 ppm (1,450 mg/m ³) ② 750 ppm (1,810 mg/m ³)
SI	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³)
TW	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)
KR	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)
IS	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 500 ppm (1,200 mg/m ³)
HU	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 2,350 mg/m ³ ② 9,400 mg/m ³ ⑤ N
GR from 1 Oct 2016	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,350 mg/m ³)
JP	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 500 ppm (1,200 mg/m ³)
RU	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 300 mg/m ³ ③ 900 mg/m ³
IDLH (US) from 1 Jan 2016	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,600 ppm [>10% LEL]
NIOSH (US)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)
ACGIH (US) from 1 Jan 2017	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm
Québec (CA)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

No data available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

See section 7. No additional measures necessary.

8.2.2. Personal protection equipment



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Eye/face protection:

Suitable eye protection: Eye glasses with side protection
 DIN-/EN-Norms EN 166

Skin protection:

Hand protection
 Suitable material: NBR (Nitrile rubber)
 Thickness of the glove material: ≥ 0,45 mm
 Breakthrough time: 480 min
 Breakthrough times and swelling properties of the material must be taken into consideration.
 The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
 For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
 Tested protective gloves must be worn: EN ISO 374
 Suitable protective clothing: Protective clothing

Respiratory protection:

Wear breathing apparatus if exposed to vapours/dusts/aerosols.
 Suitable respiratory protection apparatus: Combination filtering device
 Filtering device with filter or ventilator filtering device of type: AX
 Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

* **9.1. Information on basic physical and chemical properties**

Appearance

Physical state: gaseous **Form:** Aerosol
Colour: white **Odour:** characteristic
flammability: Yes

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	<i>not applicable</i>		
Initial boiling point and boiling range	-42 °C		
Decomposition temperature	<i>not applicable</i>		
Flash point	-80 °C		
Evaporation rate	<i>No data available</i>		
Auto-ignition temperature	<i>No data available</i>		
Upper/lower flammability or explosive limits	0.7 - 15 Vol-%		
Vapour pressure	<i>not applicable</i>		
Vapour density	<i>No data available</i>		
Density	0.795 g/cm ³	20 °C	
Bulk density	<i>not applicable</i>		
Water solubility	practically insoluble		
Partition coefficient: n-octanol/water	<i>not applicable</i>		
Dynamic viscosity	<i>not applicable</i>		
Kinematic viscosity	<i>not applicable</i>		

9.2. Other information

The information relates to the active ingredient.

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol.



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10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Extremely flammable aerosol. Pressurized container: May burst if heated. Do not expose to temperatures above 50 °C. Heating causes rise in pressure with risk of bursting.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air. Take precautionary measures against static discharge.

10.5. Incompatible materials

Oxidizing agent
 Pyrophoric or self-heating substances

10.6. Hazardous decomposition products

Nitrogen oxides (NOx), Carbon monoxide, Carbon dioxide (CO2), carbon black, aldehydes
 Gases/vapours, toxic

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

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

hydrocarbons C7-C9, isoalkanes CAS No.: 64741-66-8 EC No.: 921-728-3
LD₅₀ oral: >5,000 mg/kg (rat) OECD Guideline 401 (Acute Oral Toxicity)
LD₅₀ dermal: >2,200 - 2,500 mg/kg (rabbit)
LC₅₀ Acute inhalation toxicity (vapour): 17.3 - 22.2 mg/L 4 h (rat) OECD Guideline 403 (Acute Inhalation Toxicity)
LC₅₀ Acute inhalation toxicity (dust/mist): >9.4 mg/L 4 h (guinea pig) OECD Guideline 403 (Acute Inhalation Toxicity)
1-decene, homopolymer, hydrogenated CAS No.: 68037-01-4 EC No.: 500-183-1
LD₅₀ oral: >5,000 mg/kg (Rat)
LD₅₀ dermal: >2,000 mg/kg (Rabbit)
LC₅₀ Acute inhalation toxicity (dust/mist): >5 mg/L 4 h (Rat)
Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts CAS No.: 97675-24-6 EC No.: 307-593-8
LD₅₀ oral: >2,000 mg/kg (rat) FHS 16CFR1500.3
LD₅₀ dermal: >2,000 mg/kg (rabbit) OECD Guideline 402 (Acute Dermal Toxicity)

Acute oral toxicity:

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

Acute dermal toxicity:

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

Acute inhalation toxicity:

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

Skin corrosion/irritation:

Causes skin irritation.

Serious eye damage/irritation:

Causes serious eye irritation.

Respiratory or skin sensitisation:

Contains Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts. May produce an allergic reaction.

Germ cell mutagenicity:

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

Carcinogenicity:

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

Reproductive toxicity:

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

STOT-single exposure:

May cause drowsiness or dizziness.



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STOT-repeated exposure:

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

Aspiration hazard:

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

Additional information:

No data available

11.2. Information on other hazards**Endocrine disrupting properties:**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

Other information:

No data available

SECTION 12: Ecological information*** 12.1. Toxicity**

isobutane CAS No.: 75-28-5 EC No.: 200-857-2
LC₅₀ : 91.42 mg/L 4 d (fish) United States Environmental Protection A
EC₅₀ : 69.43 mg/L 2 d (crustaceans, Daphnia pulex (water flea)) USEPA OPPT Risk Assessment Division (200
ErC₅₀ : 19.37 mg/L 4 d (Algae/water plant) USEPA OPPT Risk Assessment Division (200
propane CAS No.: 74-98-6 EC No.: 200-827-9
LC₅₀ : 49.9 mg/L 4 d (fish, fish) United States Environmental Protection A
LC₅₀ : 14.22 mg/L 2 d (crustaceans, Daphnid no other information.)
LC₅₀ : 24.11 mg/L 4 d (fish, Fish, no other information)
EC₅₀ : 69.43 mg/L 2 d (crustaceans, Daphnia pulex (water flea))
EC₅₀ : 7.71 mg/L 4 d (Algae/water plant, Green alga (no further information))
ErC₅₀ : 19.37 mg/L 4 d (Algae/water plant, Algae/water plant) USEPA OPPT Risk Assessment Division (200)
hydrocarbons C7-C9, isoalkanes CAS No.: 64741-66-8 EC No.: 921-728-3
LC₅₀ : 0.11 mg/L 4 d (fish, Oncorhynchus mykiss (previous name: Salmo gairdneri)) OECD Guideline 203 (Fish, Acute Toxicity Test)
1-decene, homopolymer, hydrogenated CAS No.: 68037-01-4 EC No.: 500-183-1
LC₅₀ : >750 mg/L 4 d (fish)
EC₅₀ : 190 mg/L 2 d (crustaceans, Daphnia pulex (water flea))
EC₅₀ : >1,000 mg/L 3 d (Algae/water plant)
butane CAS No.: 106-97-8 EC No.: 203-448-7
LC₅₀ : 49.9 mg/L 4 d (fish, fish) United States Environmental Protection A
LC₅₀ : 49.9 mg/L 4 d (fish)
LC₅₀ : 24.11 - 147.54 mg/L 4 d (fish)
LC₅₀ : 14.22 - 69.43 mg/L 2 d (crustaceans)
EC₅₀ : 69.43 mg/L 2 d (crustaceans, Daphnia pulex (water flea)) USEPA OPPT Risk Assessment Division (200)
EC₅₀ : 69.43 mg/L 2 d (crustaceans, Daphnia)
EC₅₀ : 7.71 - 19.37 mg/L 3 d (Algae/water plant)
EC₅₀ : 69.43 mg/L
ErC₅₀ : 19.37 mg/L 4 d (Algae/water plant, Algae/water plant) USEPA OPPT Risk Assessment Division (200)
ErC₅₀ : 19.37 mg/L 4 d (Algae/water plant)
Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts CAS No.: 97675-24-6 EC No.: 307-593-8
EC₅₀ : >1,000 mg/L 2 d (crustaceans, Daphnia magna) OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
NOEC : >1,000 mg/L 2 d (crustaceans, Daphnia magna) OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts CAS No.: 84989-14-0 EC No.: 284-903-7
LC₅₀ : ≥1.7 - ≤7.7 mg/L 4 d (fish) OECD Guideline 203 (Fish, Acute Toxicity Test)

Aquatic toxicity:

Harmful to aquatic life with long lasting effects.

Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment.



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* **12.2. Persistence and degradability**

propane CAS No.: 74-98-6 EC No.: 200-827-9
Biodegradation: not applicable
butane CAS No.: 106-97-8 EC No.: 203-448-7
Biodegradation: not applicable
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts CAS No.: 84989-14-0 EC No.: 284-903-7
Biodegradation: Yes, rapidly

Additional information:

The product has not been tested.

* **12.3. Bioaccumulative potential**

isobutane CAS No.: 75-28-5 EC No.: 200-857-2
Log K_{OW}: 1.09
propane CAS No.: 74-98-6 EC No.: 200-827-9
Log K_{OW}: 1.09
Bioconcentration factor (BCF): 13.18
hydrocarbons C7-C9, isoalkanes CAS No.: 64741-66-8 EC No.: 921-728-3
Log K_{OW}: 5.65
Bioconcentration factor (BCF): 198.7 Species: other: Mytilus edulis
1-decene, homopolymer, hydrogenated CAS No.: 68037-01-4 EC No.: 500-183-1
Log K_{OW}: > 6.5
butane CAS No.: 106-97-8 EC No.: 203-448-7
Log K_{OW}: 1.09
Bioconcentration factor (BCF): 33.88
Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts CAS No.: 97675-24-6 EC No.: 307-593-8
Log K_{OW}: 23.62
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts CAS No.: 84989-14-0 EC No.: 284-903-7
Log K_{OW}: 6

Partition coefficient: n-octanol/water:

not applicable

Accumulation / Evaluation:

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

* **12.5. Results of PBT and vPvB assessment**

isobutane CAS No.: 75-28-5 EC No.: 200-857-2
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
propane CAS No.: 74-98-6 EC No.: 200-827-9
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
hydrocarbons C7-C9, isoalkanes CAS No.: 64741-66-8 EC No.: 921-728-3
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
1-decene, homopolymer, hydrogenated CAS No.: 68037-01-4 EC No.: 500-183-1
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
butane CAS No.: 106-97-8 EC No.: 203-448-7
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts CAS No.: 97675-24-6 EC No.: 307-593-8
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts CAS No.: 84989-14-0 EC No.: 284-903-7
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.



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12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations*** 13.1. Waste treatment methods**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

13.1.1. Product/Packaging disposal**Waste codes/waste designations according to EWC/AVV Directive 2008/98/EC (Waste Framework Directive)**

HP 3	Flammable
HP 4	Irritant — skin irritation and eye damage

Waste code packaging

15 01 04	metallic packaging
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Waste treatment options**Appropriate disposal / Product:**

Dispose of waste according to applicable legislation.





Appropriate disposal / Package:

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

13.2. Additional information

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
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)			
 2.1	 2.1	 2.1	 2.1
14.4. Packing group			
		-	
* 14.5. Environmental hazards			
No	No	No	No data available
14.6. Special precautions for user			
Limited quantity (LQ): 1L Classification code: 5F Tunnel restriction code: (D)	Limited quantity (LQ): 1L Classification code: 5F	Limited quantity (LQ): 1L EmS-No.: F-D; S-U	No data available

14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according to IBC Code.



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SECTION 15: Regulatory information

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

15.1.1. EU legislation

Restrictions on use:

Use restriction according to REACH annex XVII, no.: 3, 28, 40, 75

Other regulations (EU):

Hazard categories:

- P3a 'Flammable' aerosols Category 1 or 2, containing flammable gases Category 1 or 2 or flammable liquids

Named dangerous substances:

- Liquefied flammable gases, Category 1 or 2 (including liquefied petroleum gas) and natural gas

Aerosol Directive (75/324/EEC)

Maximum VOC content of the product in a ready to use condition: 763,2 g/L

Directive 2004/42/EC on the limitation of emissions of volatile organic compounds:

Volatile organic compounds (VOC) content in percent by weight: 96 Vol-%

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Störfallverordnung (12. BImSchV)

for substances contained in the product:

Hazard categories:

- P3a 'Flammable' aerosols Category 1 or 2, containing flammable gases Category 1 or 2 or flammable liquids

Named dangerous substances:

- Liquefied flammable gases, Category 1 or 2 (including liquefied petroleum gas) and natural gas

Technische Anleitung zur Reinhaltung der Luft (TA-Luft)

Remark:

To follow: 5.2.5

Water hazard class

WGK:

1 - slightly hazardous to water

Source:

Self-classification (mixture; calculation rule).

Technische Regeln für Gefahrstoffe

TRGS 500

TRGS 510

TRGS 900

Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)

Berufsgenossenschaftliche Informationen (DGUV-Informationen) 868

Berufsgenossenschaftliche Regeln (DGUV-Regeln) 189, 190, 192, 195

[SK] National regulations

Other regulations, restrictions and prohibition regulations

Zákon č. 67/2010 Z.z., o podmienkach uvedenia chemických látok a chemických zmesí na trh a o zmene a doplnení niektorých zákonov (chemický zákon).

Zákon č. 124/2006 Z. z. o bezpečnosti a ochrane zdravia pri práci a o zmene a doplnení niektorých zákonov.

Zákon NR SR č. 355/2007 Z.z., o ochrane, podpore a rozvoji verejného zdravia a o zmene a doplnení niektorých zákonov, v znení neskorších predpisov.

Nariadenie vlády SR 471/2011 Z.z., ktorým sa mení nariadenie vlády Slovenskej republiky č. 355/2006 Z. z. o ochrane zamestnancov pred rizikami súvisiacimi s expozíciou chemickým faktorom pri práci, Príloha č.1.

Zákon č. 79/2015 Z.z. o odpadoch v znení neskorších predpisov.



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Vyhláška MV SR č. 96/2004 Z.z., ktorou sa ustanovujú zásady protipožiarnej bezpečnosti pri manipulácii a skladovaní horľavých kvapalín, ťažkých vykurovacích olejov a rastlinných a živočíšnych tukov a olejov. Zákon NR SR č. 137/2010 Z.z. o ovzduší v znení neskorších predpisov. Zákon č. 319/2013 Z.z. o pôsobnosti orgánov štátnej správy pre sprístupňovanie biocídnych výrobkov na trh a ich používanie a o zmene a doplnení niektorých zákonov (biocídny zákon).

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

* 16.1. Indication of changes

1.1.	Product identifier
2.1.	Classification of the substance or mixture
2.2.	Label elements
3.2.	Mixtures
4.1.	Description of first aid measures
4.2.	Most important symptoms and effects, both acute and delayed
4.3.	Indication of any immediate medical attention and special treatment needed
6.2.	Environmental precautions
8.1.	Control parameters
9.1.	Information on basic physical and chemical properties
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
12.1.	Toxicity
12.2.	Persistence and degradability
12.3.	Bioaccumulative potential
12.5.	Results of PBT and vPvB assessment
13.1.	Waste treatment methods
14.5.	Environmental hazards
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes
16.2.	Abbreviations and acronyms
16.3.	Key literature references and sources for data
16.4.	Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]
16.5.	List of relevant hazard statements and/or precautionary statements from sections 2 to 15

* 16.2. Abbreviations and acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
DIN	German Institute for Standardization / German Industrial Standard
DNEL	derived no-effect level
EC ₅₀	Effective Concentration 50%
ES	Exposure scenario
EWC	European Waste Catalogue
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC ₅₀	Lethal (fatal) Concentration 50%
LD ₅₀	Lethal (fatal) Dose 50%
MAK	Maximum concentration in the workplace air (CH)
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
OSHA	Occupational Safety & Health Administration



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PBT persistent and bioaccumulative and toxic
 PNEC Predicted No Effect Concentration
 REACH Registration, Evaluation and Authorization of Chemicals
 RID Dangerous goods regulations for transport by rail
 TRGS Technische Regeln für Gefahrstoffe
 UN United Nations
 VOC Volatile organic compounds
 See overview table at www.euphrac.eu
 For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

* **16.3. Key literature references and sources for data**

EC 1907/2006 - REACH Regulation
 1272/2008 EC - Regulation on classification, labeling and packaging of substances and mixtures, and amending Directives 67/548/EEC and 1999/45/EC and Regulation (EC) No 1907/2006
 Regulation (EC) No 1907/2006 (REACH), Annex II
 European Chemicals Agency (ECHA), C & L classification and labeling inventory
 European Chemicals Agency (ECHA), ECHA CHEM Registered substances
 OECD The Global Portal to Information on Chemical Substances (ChemPortal)
 Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA): GESTIS substance database and International limit values for chemical substances
 Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances hazardous to water Rigoletto (catalog substances hazardous to water)

Substance name	Type	source of supply
hydrocarbons C7-C9, isoalkanes CAS No.: 64741-66-8 EC No.: 921-728-3	Classification of the substance or mixture; LD ₅₀ oral; LD ₅₀ dermal; LC ₅₀ Acute inhalation toxicity (vapour); LC ₅₀ Acute inhalation toxicity (dust/mist); LC ₅₀	Source: European Chemicals Agency, http://echa.europa.eu/
Benzene, C9-13-alkyl derivs., distn. residues, sulfonated, calcium salts CAS No.: 97675-24-6 EC No.: 307-593-8	Classification of the substance or mixture; LD ₅₀ oral; LD ₅₀ dermal; EC ₅₀ ; NOEC	Source: European Chemicals Agency, http://echa.europa.eu/
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts CAS No.: 84989-14-0 EC No.: 284-903-7	Classification of the substance or mixture; LC ₅₀	Source: European Chemicals Agency, http://echa.europa.eu/
propane CAS No.: 74-98-6 EC No.: 200-827-9	LC ₅₀ ; EC ₅₀	Source: European Chemicals Agency, http://echa.europa.eu/

* **16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]**

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols (<i>Aerosol 1</i>)	H222; H229: Extremely flammable aerosol. Pressurised container: May burst if heated.	On basis of test data.
Skin corrosion/irritation (<i>Skin Irrit. 2</i>)	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>)	H319: Causes serious eye irritation.	Calculation method.
STOT-single exposure (<i>STOT SE 3</i>)	H336: May cause drowsiness or dizziness.	Calculation method.
Hazardous to the aquatic environment (<i>Aquatic Chronic 3</i>)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

* **16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15**

Hazard statements	
H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.



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Hazard statements

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

16.6. Training advice

No data available

16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

* Data changed compared with the previous version.