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 Silikon-Spray

Other means of identification:
RAVENOL Silicone-Spray

Article No.:
1360033

UFI:
XDSF-TKP3-UA8E-VVTR

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: +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
aerosol dispensers and lighters *(Aerosol 1)*	H222; H229: Extremely flammable aerosol. Pressurised container: May burst if heated.	On basis of test data.
Aspiration hazard *(Asp. Tox. 1)*	H304: May be fatal if swallowed and enters airways.	Calculation method.
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	Calculation method.
STOT-single exposure *(STOT SE 3)*	H336: May cause drowsiness or dizziness.	Calculation method.
Hazardous to the aquatic environment *(Aquatic Chronic 3)*	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

*
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, n-alkanes, Isoalkanes, cyclenes

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.
H336	May cause drowsiness or dizziness.

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

Supplemental hazard information: none

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.
P273	Avoid release to the environment.

Precautionary statements Response	
P302 + P352	IF ON SKIN: Wash with plenty of water and soap.
P312	Call a POISON CENTER/doctor/Emergency telephone number if you feel unwell.

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.

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.: 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	25 – 50 weight-%
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	25 – 50 weight-%
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 – 25 weight-%
CAS No.: 64742-49-0 EC No.: 927-510-4 REACH No.: 01-2119475515-33	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** 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) 5,500 mg/kg ATE (dermal) 2,770 mg/kg ATE (inhalation, gases) 23.3 mg/L	10 – 25 weight-%
CAS No.: 110-54-3 EC No.: 203-777-6 Index No.: 601-037-00-0 REACH No.: 01-0000601037-00-0000	**n-hexane** Aquatic Chronic 2 (H411), Asp. Tox. 1 (H304), Flam. Liq. 2 (H225), Repr. 2 (H361f***), STOT RE 2 (H373**), STOT SE 3 (H336), Skin Irrit. 2 (H315) Danger **Specific concentration limit (SCL)** STOT RE 2; H373: C ≥ 5% **Acute Toxicity Estimate** ATE (oral) > 2,000 g/m³ ATE (dermal) > 2,000 g/m³ ATE (inhalation, gases) 169 mg/L ATE (inhalation, vapour) > 31.86 mg/L	< 1 weight-%

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. If breathing is irregular or stopped, administer artificial respiration.
Consult a doctor immediately in the case of inhaling spray mist and show him packing or label.
May cause drowsiness or dizziness.

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. Causes skin irritation.

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. Remove contact lenses, if present and easy to do. Continue rinsing.

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
May cause drowsiness or dizziness.
Causes 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 (NOx), 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 gas/fumes/vapour/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).

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 gas/vapour/aerosol.
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.

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**
MY from 1 Jan 2000	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m³)
CH from 1 Jan 2024	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m³) ② 3,200 ppm (7,600 mg/m³)

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
MAK (AT)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m³)
PL	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 1,900 mg/m³ ② 3,000 mg/m³
TRGS 900 (DE)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,400 mg/m³) ② 4,000 ppm (9,600 mg/m³) ⑤ DFG
NO	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 250 ppm (600 mg/m³)
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/m³) ② 1,000 ppm (2,400 mg/m³) ⑤ liite 4
DK	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 500 ppm (1,200 mg/m³) ② 1,000 ppm (2,400 mg/m³)
MAK (AT)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	② 1,600 ppm (3,800 mg/m³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
BG	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 1,900 mg/m³
HR	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 600 ppm (1,450 mg/m³) ② 750 ppm (1,810 mg/m³) 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/m³)
EE	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,500 mg/m³)
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/m³
BC (CA) from 1 Jun 2018	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	② 1,000 ppm ⑤ EX
TSH (SK) from 1 Jun 2024	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,400 mg/m³) ⑤ (karcinogénne) karc 1A
VLA (FR)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m³)
WEL (GB)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 600 ppm (1,450 mg/m³) ② 750 ppm (1,810 mg/m³)

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
SI	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,400 mg/m³) ② 4,000 ppm (9,600 mg/m³)
TW	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m³)
KR	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m³)
IS	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 500 ppm (1,200 mg/m³)
HU	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 2,350 mg/m³ ② 9,400 mg/m³ 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/m³)
REL (JP)	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 500 ppm (1,200 mg/m³)
RU	**butane** CAS No.: 106-97-8 EC No.: 203-448-7	① 300 mg/m³ ③ 900 mg/m³
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/m³)
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/m³)
CH from 1 Jan 2024	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m³) ② 3,200 ppm (7,600 mg/m³)
HTP (FI)	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m³) ② 1,000 ppm (2,400 mg/m³) ⑤ liite 4
MAK (AT)	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	② 1,600 ppm (3,800 mg/m³) 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/m³)
EE	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m³)
TSH (SK) from 1 Jun 2024	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	① 1,000 ppm (2,400 mg/m³) ⑤ (karcinogénne) karc 1A
SI	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	① 1,000 ppm (2,400 mg/m³) ② 4,000 ppm (9,600 mg/m³)

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
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
Québec (CA) from 14 Mar 2024	**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/m³)
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/m³) ② 4,000 ppm (9,600 mg/m³) ⑤ DFG
MAK (AT)	**isobutane** CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m³)
CH from 1 Jan 2024	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³) ② 4,000 ppm (7,200 mg/m³) ⑤ Messmeth: NIOSH
PL	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,800 mg/m³
NO	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 500 ppm (900 mg/m³)
HTP (FI)	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 800 ppm (1,500 mg/m³) ② 1,100 ppm (2,000 mg/m³) ⑤ liite 4
TRGS 900 (DE)	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³) ② 4,000 ppm (7,200 mg/m³) ⑤ DFG
BG	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,800 mg/m³
DK	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³) ② 2,000 ppm (3,600 mg/m³)
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/m³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
RO	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 778 ppm (1,400 mg/m³) ② 1,000 ppm (1,800 mg/m³)
EE	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³)

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
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/m³)
SI	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³) ② 4,000 ppm (7,200 mg/m³)
TW	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³)
IS	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³)
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/m³)
LV from 7 Apr 2015	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³)
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/m³)
NIOSH (US)	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³)
TRGS 900 (DE) from 30 Nov 2017	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 700 mg/m³ ② 1,400 mg/m³ ⑤ (Kohlenwasserstoffe, aliphatisch, C6-C8)
VLA (FR)	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 1,000 mg/m³ ② 1,500 mg/m³ ⑤ (hydrocarbures, vapeur C6-C12)
NO	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 50 ppm (275 mg/m³) ⑤ (hvit spirit aromatisk innhold: < 22 %)
CH from 1 Jan 2024	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 500 ppm (2,000 mg/m³) ⑤ Messmeth: OSHA
MAK (AT)	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 200 mL/m³ ② 400 mL/m³ ⑤ (für Kohlenwasserstoffgemische mit einem Gehalt an aromatischen Kohlenwasserstoffen von weniger als 1 %, an n-Hexan von weniger als 5 % und an Cyclo-/Isohexanen von weniger als 25 %)

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**
MAK (AT)	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 170 mL/m³ ② 340 mL/m³ ⑤ (für Kohlenwasserstoffgemische mit einem Gehalt an aromatischen Kohlenwasserstoffen von weniger als 1 %, an n-Hexan von weniger als 5 % und an Cyclo-/Isohexanen von 25 % oder mehr)
WEL (GB)	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 1,800 mg/m³ ⑤ (hydrocarbons, aliphatic C5-C6)
SI from 4 Dec 2018	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 700 mg/m³
PL	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 500 mg/m³ ② 1,500 mg/m³
RO from 21 Aug 2018	**Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes** CAS No.: 64742-49-0 EC No.: 927-510-4	① 700 mg/m³ ② 1,000 mg/m³
BE	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
CZ from 1 Jan 2024	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 19.5 ppm (70 mg/m³) ② 55.8 ppm (200 mg/m³) ⑤ (může pronikat pokožkou) I, D, P
PL from 1 Jan 2006	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 72 mg/m³ ⑤ (może przenikać przez skórę do organizmu) skóra
NO	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ (forplantningsevne, verdsetting) RE
TRGS 900 (DE)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (180 mg/m³) ② 400 ppm (1,440 mg/m³) ⑤ DFG, EU, Y
IE from 17 Jan 2020	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ (may be absorbed through the skin) SK, IOELV
HTP (FI)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ (voivat imeytyä ihon läpi) iho
MY from 1 Jan 2000	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (176 mg/m³) ⑤ (resapan melalui kulit hendaklah diambil kira)
LT from 15 Oct 2007	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ (pavojingas reprodukcijai) R
SE from 21 Aug 2018	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ② 50 ppm (180 mg/m³)
NPEL (SK) from 23 Nov 2011	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ② 40 ppm (140 mg/m³)
MAK (AT) from 11 Sept 2007	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	② 80 ppm (288 mg/m³) ⑤ (max. 4x15 min./Schicht) f

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
CN from 1 Apr 2020	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 100 mg/m³ ② 180 mg/m³ ⑤ (###############)
DK from 13 Feb 2021	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ② 40 ppm (144 mg/m³) ⑤ E
BG	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
HR	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ (mora se uzeti u obzir prodiranje kroz kožu) koža
ACGIH (US)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (176 mg/m³) ⑤ (may be absorbed through the skin)
RO	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ R2
EE	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
Alberta (CA) from 1 Dec 2021	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (176 mg/m³) ⑤ (may be absorbed through the skin) 1
LV from 1 Feb 2011	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ Ietekme uz dzirdi
ES	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ VLB®, VL
BC (CA)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm ⑤ (may be absorbed through the skin) Skin
MAK (AT) from 11 Sept 2007	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ f
IOELV (EU)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
REL (JP)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 40 ppm (140 mg/m³) ⑤ (####################)
VRC (FR) from 1 Jun 2008	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
SI from 11 May 2021	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ② 160 ppm (576 mg/m³) ⑤ Y, BAT, EU2
TW	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (176 mg/m³) ⑤ (##########)
KR	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (180 mg/m³)
WEL (GB)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)

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
IS	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
CH from 1 Jan 2024	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (180 mg/m³) ② 400 ppm (1,440 mg/m³) ⑤ (kann über die Haut aufgenommen werden) H R2 SSC B; Messmeth: NIOSH
HU from 1 Apr 2024	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ⑤ (felvehető a bőrön keresztül) b, i, BEM, T
GR from 1 Oct 2016	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
NL from 1 Jan 2023	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³) ② 40 ppm (144 mg/m³)
TR	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 20 ppm (72 mg/m³)
RU	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 300 mg/m³ ③ 900 mg/m³
IDLH (US) from 1 Jan 1994	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 1,100 ppm [10% LEL]
OSHA (US)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 500 ppm (1,800 mg/m³)
NIOSH (US)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (180 mg/m³)
Québec (CA) from 1 Apr 2022	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	① 50 ppm (176 mg/m³) ⑤ (may be absorbed through the skin)

8.1.2. Biological limit values

Limit value type (country of origin)	Substance name	Limit value	① Parameter ② Test material ③ Time of sampling: ④ Remark
TRGS 903 (DE)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	5 mg/L	① 2,5-Hexandion + 4,5-Dihydroxy-2-hexanon, Nach Hydrolyse: ② Urin ③ Expositionsende bzw. Schichtende
BAT (CH)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	5 mg/L	① 2,5-Hexandion + 4,5-Dihydroxy-2-hexanon ② Urin ③ Expositionsende bzw. Schichtende
VLB (ES) from 1 Jan 2014	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	0.2 mg/L	① 2,5- Hexanodiona ② orina ③ en caso de exposición por largo tiempo, fin de exposición o fin de turno
BIO (HU) from 7 Feb 2020	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	2 mg/L	① 2,5-hexán-dion ② vizelet ③ expozíció vége illetve műszak vége

Limit value type (country of origin)	Substance name	Limit value	① Parameter ② Test material ③ Time of sampling: ④ Remark
OEL-B (JP) from 1 May 2023	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	3 mg/g ########	① 2,5-Hexanedione ② # ③ ########## ④ (after acid hydrolysis)
OEL-B (JP) from 1 May 2023	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	0.3 mg/g ########	① 2,5-Hexanedione ② # ③ ########## ④ (without acid hydrolysis)
VLBO (RO)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	5 mg/g creatinină	① 2,5 hexandiona ② urina ③ finalul expunerii, resp. finalul schimbului
BMH (SK)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	5 mg/L	① 2,5–Hexándion a 4,5-dihydroxy-2-hexanón ② urín ③ koniec expozície, príp. koniec zmeny
ACGIH-BEI (US) from 1 Jan 2019	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	0.5 mg/L	① 2,5-Hexanedion ② urine ③ end of exposure or end of shift
BIO (HR)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	150 µg/L	① n-heksan ② krv ③ za vrijeme izloženosti
BIO (HR)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	40 ppm za vrijeme izloženosti	① n-heksan ③ za vrijeme izloženosti
BIO (HR)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	0.2 mg/g kreatinin	① 2-heksanol ② urin ③ kraj izloženosti, odnosno kraj smjene
BIO (HR)	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	5.3 mg/g kreatinin	① 2,5-heksandion ② urin ③ kraj izloženosti, odnosno kraj smjene
BAT (SI) from 4 Dec 2018	**n-hexane** CAS No.: 110-54-3 EC No.: 203-777-6	5 mg/L	① 2,5-heksandion ② urin ③ ob koncu delovne izmene

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes CAS No.: 64742-49-0 EC No.: 927-510-4	2,085 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes CAS No.: 64742-49-0 EC No.: 927-510-4	447 mg/m³	① DNEL Consumer ② Long-term – inhalation, systemic effects
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes CAS No.: 64742-49-0 EC No.: 927-510-4	300 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects

Substance name	DNEL value	① DNEL type ② Exposure route
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes CAS No.: 64742-49-0 EC No.: 927-510-4	149 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes CAS No.: 64742-49-0 EC No.: 927-510-4	149 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
n-hexane CAS No.: 110-54-3 EC No.: 203-777-6	75 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects

*
8.2. Exposure controls

8.2.1. Appropriate engineering controls
See section 7. No additional measures necessary.

8.2.2. Personal protection equipment



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 In the case of wanting to use the gloves again, clean them before taking off and air them well.

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: A2-P2
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: Liquid
Form: Aerosol
Colour: colourless
Odour: characteristic
flammability: Yes

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	*not applicable*		
Melting point	*No data available*		
Freezing point	*No data available*		
Initial boiling point and boiling range	*No data available*		

Parameter	Value	at °C	① Method ② Remark
Flash point	*No data available*		
Evaporation rate	*No data available*		
Auto-ignition temperature	*No data available*		
Upper/lower flammability or explosive limits	1.5 – 10.9 Vol-%		② applies to the propellant gas
Vapour pressure	*No data available*		
Vapour density	*No data available*		
Density	0.837 kg/L	20 °C	
Relative density	< 1	20 °C	
Bulk density	*not applicable*		
Water solubility	practically insoluble		
Dynamic viscosity	*No data available*		
Kinematic viscosity	*No data available*		

* **9.2. Other information**

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol.

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**

butane CAS No.: 106-97-8 EC No.: 203-448-7
LC_{50} Acute inhalation toxicity (gas): 658 ppmV 4 h (Rat) GESTIS
isobutane CAS No.: 75-28-5 EC No.: 200-857-2
LC_{50} Acute inhalation toxicity (vapour): 1,237 mg/L
propane CAS No.: 74-98-6 EC No.: 200-827-9
LC_{50} Acute inhalation toxicity (gas): 520,400 ppmV 2 h (mouse)
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes CAS No.: 64742-49-0 EC No.: 927-510-4
LD_{50} oral: 5,500 mg/kg (Rat)
LD_{50} dermal: 2,770 mg/kg (Rat)
LC_{50} Acute inhalation toxicity (gas): 23.3 mg/L (Rat)

n-hexane CAS No.: 110-54-3 EC No.: 203-777-6
LD_{50} oral: >2,000 g/m³ (Ratte)
LD_{50} dermal: >2,000 g/m³ (Rabbit)
LC_{50} Acute inhalation toxicity (gas): 169 mg/L 4 h (Ratte)
LC_{50} Acute inhalation toxicity (vapour): >31.86 mg/L (Rat)

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

Respiratory or skin sensitisation:
Based on available data, the classification criteria are not met.

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.

STOT-repeated exposure:
Based on available data, the classification criteria are not met.

Aspiration hazard:
May be fatal if swallowed and enters airways.
Observe risk of aspiration if vomiting occurs.
For viscosity data, see section 9.

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 information available.

SECTION 12: Ecological information

*

12.1. Toxicity

butane CAS No.: 106-97-8 EC No.: 203-448-7
LC_{50}: 49.9 mg/L 4 d (fish, fish) United States Environmental Protection A
EC_{50}: 69.43 mg/L 2 d (crustaceans, Daphnia pulex (water flea)) USEPA OPPT Risk Assessment Division (200)
EC_{50}: 69.43 mg/L 2 d (crustaceans, Daphnia)
ErC_{50}: 19.37 mg/L 4 d (Algae/water plant, Algae/water plant) USEPA OPPT Risk Assessment Division (200)
ErC_{50}: 19.37 mg/L 4 d (Algae/water plant)
isobutane CAS No.: 75-28-5 EC No.: 200-857-2
LC_{50}: 91.42 mg/L 4 d (fish) United States Environmental Protection A
EC_{50}: 69.43 mg/L 2 d (crustaceans, Daphnia pulex (water flea)) USEPA OPPT Risk Assessment Division (200
ErC_{50}: 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
LC_{50}:	49.9 mg/L 4 d (fish, fish) United States Environmental Protection A
LC_{50}:	14.22 mg/L 2 d (crustaceans, Daphnid no other information.)
LC_{50}:	24.11 mg/L 4 d (fish, Fish, no other information)
EC_{50}:	69.43 mg/L 2 d (crustaceans, Daphnia pulex (water flea))
EC_{50}:	7.71 mg/L 4 d (Algae/water plant, Green algea (no further information))
ErC_{50}:	19.37 mg/L 4 d (Algae/water plant, Algae/water plant) USEPA OPPT Risk Assessment Division (200)
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes	CAS No.: 64742-49-0 EC No.: 927-510-4
LC_{50}:	>1 – 10 mg/L 4 d (fish, Oncorhynchus mykiss (Rainbow trout))
EC_{50}:	>1 – 10 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))
NOEC:	1.534 mg/L 28 d (fish, Oncorhynchus mykiss (Rainbow trout)) CONCAWE Brussels Begium (2010)
NOEC:	1 mg/L 21 d (crustaceans, Daphnia magna (Big water flea))
ErC_{50}:	12 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata) SIDS Initial Assessment Report For SIAM
n-hexane	CAS No.: 110-54-3 EC No.: 203-777-6
LC_{50}:	2.5 mg/L 4 d (fish, Pimephales prometas)
EC_{50}:	21.85 mg/L 2 d (crustaceans, Daphnia magna)
ErC_{50}:	9.285 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata)

Aquatic toxicity:
Harmful to aquatic life with long lasting effects.

Additional ecotoxicological information:
Do not allow uncontrolled discharge of product into the environment.

* 12.2. Persistence and degradability

butane	CAS No.: 106-97-8 EC No.: 203-448-7
Biodegradation:	not applicable
propane	CAS No.: 74-98-6 EC No.: 200-827-9
Biodegradation:	not applicable

Abiotic degradation:
The product has not been tested.

Additional information:
The product has not been tested.

* 12.3. Bioaccumulative potential

butane	CAS No.: 106-97-8 EC No.: 203-448-7
Log K_{OW}:	1.09
Bioconcentration factor (BCF):	33.88
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
n-hexane	CAS No.: 110-54-3 EC No.: 203-777-6
Log K_{OW}:	3.9

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

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.
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, n-alkanes, Isoalkanes, cyclenes CAS No.: 64742-49-0 EC No.: 927-510-4	
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.	
n-hexane CAS No.: 110-54-3 EC No.: 203-777-6	
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.

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 information 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

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
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.

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, 40

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

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

Aerosol Directive (75/324/EEC)

Maximum VOC content of the product in a ready to use condition: 540 g/L

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

Volatile organic compounds (VOC) content in percent by weight: 89 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:

3 - highly 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.
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
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
9.2.	Other information
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
KG	body weight
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
OEL	Threshold Limit Value
OSHA	Occupational Safety & Health Administration
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
SCL	Specific concentration limit
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
propane CAS No.: 74-98-6 EC No.: 200-827-9	LC_{50} Acute inhalation toxicity (gas); 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
aerosol dispensers and lighters *(Aerosol 1)*	H222; H229: Extremely flammable aerosol. Pressurised container: May burst if heated.	On basis of test data.
Aspiration hazard *(Asp. Tox. 1)*	H304: May be fatal if swallowed and enters airways.	Calculation method.
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	Calculation method.
STOT-single exposure *(STOT SE 3)*	H336: May cause drowsiness or dizziness.	Calculation method.
Hazardous to the aquatic environment *(Aquatic Chronic 3)*	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.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic 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.