

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 24.08.2017

Version number 1

Revision: 24.08.2017

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

- 1.1 Product identifier

- Trade name: **ergo 5100 flüssig**

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

No further relevant information available.

- Application of the substance / the mixture Activator

- 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:

Kisling AG

Motorenstrasse 102

CH-8620 Wetzikon

Telefon: +41-(0) 58-272 0 272

Telefax: +41-(0) 58-272 0 273

- Further information obtainable from: Safety Department

- Department issuing MSDS: ergo@kisling.com

- 1.4 Emergency telephone number: Tox Info Suisse: 145 / +41-44-2 51 51 51

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture

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

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

- 2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

- Hazard pictograms



GHS02



GHS07



GHS08



GHS09

- Signal word Danger

- Hazard-determining components of labelling:

heptane

- Hazard statements

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

H410 Very toxic to aquatic life with long lasting effects.

- Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof electrical/ventilating/lighting equipment.

P261 Avoid breathing mist/vapours/spray.

P280 Wear protective gloves / eye protection.

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P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

- Labelling of packages where the contents do not exceed 125 ml**- Hazard pictograms**

GHS02 GHS07 GHS08 GHS09

- Signal word Danger**- Hazard-determining components of labelling:**

heptane

- Hazard statements

H304 May be fatal if swallowed and enters airways.

- Precautionary statements

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P331 Do NOT induce vomiting.

- 2.3 Other hazards**- Results of PBT and vPvB assessment****- PBT:** Not applicable.**- vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- Description: Mixture of substances listed below with nonhazardous additions.**- Dangerous components:**

CAS: 142-82-5	heptane	50-<100%
EINECS: 205-563-8	Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Acute 1, H400;	
Index number: 601-008-00-2	Aquatic Chronic 1, H410; Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 99-97-8	N,N-dimethyl-p-toluidine	0.1-<1%
EINECS: 202-805-4	Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 2, H330;	
Index number: 612-056-00-9	Carc. 2, H351; STOT RE 2, H373; Aquatic Chronic 3, H412	

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures**- General information:** Immediately remove any clothing soiled by the product.**- After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

- After skin contact:

After contact with skin, wash immediately with plenty of soap and water.

If skin irritation continues, consult a doctor.

- After eye contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

- After swallowing:

Rinse out mouth and then drink plenty of water.

If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

- 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

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- **Information for doctor:**
If swallowed or in the event of vomiting, risk of product entering the lungs. This may cause chemical pneumonia or suffocation.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
- **Additional information**
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources.
Avoid contact with the eyes and skin.
- **6.2 Environmental precautions:**
Prevent seepage into sewage system, workpits and cellars.
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
Fumes can combine with air to form an explosive mixture.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 10 for information on "stability and reactivity".
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store receptacle in a well ventilated area.
Store under lock and key and out of the reach of children.
- **Storage class (TRGS 510, Storage of hazardous substances in non-stationary containers):** 3
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

142-82-5 heptane

MAK (Switzerland)	Short-term value: 1600 mg/m ³ , 400 ppm Long-term value: 1600 mg/m ³ , 400 ppm
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- **DNELs**

142-82-5 heptane

Oral	Langzeit, Systemische Effekte	149 mg/kg bw/day (all)
Dermal	Langzeit, Systemische Effekte	149 mg/kg bw/day (all)
		300 mg/kg bw/day (ber)
Inhalative	Langzeit, Systemische Effekte	447 mg/m ³ (all)
		2,085 mg/m ³ (ber)

- **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**
Protective gloves (EN 374)
Check protective gloves prior to each use for their proper condition.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
Find below a list of appropriate protective gloves for chemical surrounding:
.
Permeation time / penetration time: = 480 minutes (DIN EN 374):
Chloropren Nitril I, Nr. 0727
Nitril I, Nr. 0730, 0732, 0733, 0736, 0737, 0738, 0739 oder 0836

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Viton, Nr. 0890

Permeation time / penetration time: = 240 minutes (DIN EN 374):

Chloropren Nitril II, Nr. 0717

Permeation time / penetration time: = 120 minutes (DIN EN 374):

Nitril VI, Nr. 0754

of KCL company (e-mail: vertrieb@kcl.de).

The recommendation is based exclusively on the chemical compatibility and the test according to EN374 under laboratory conditions.

Requirements can vary according to the use. Therefore, please always take into account the glove supplier's recommendations.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Permeation time / penetration time: see above (material of gloves)

- Eye protection: Safety glasses

- Body protection: Use protective suit.

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
- General Information
- Appearance:

Form: Fluid
Colour: Colourless

- Odour: Petrol-like

- Odour threshold: Not determined.

- pH-value: Not determined.

- Change in condition

Melting point/freezing point: Undetermined.

Initial boiling point and boiling range: Undetermined.

- Flash point: <0°C

- Flammability (solid, gas): Not applicable.

- Ignition temperature:

Decomposition temperature: Not determined.

- Auto-ignition temperature: Product is not self-igniting.

- Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- Explosion limits:

Lower: Not determined.

Upper: Not determined.

- Vapour pressure: Not determined.

- Density at 20°C: 0,7g/cm³

- Relative density Not determined.

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- Vapour density	Not determined.
- Evaporation rate	Not determined.
- Solubility in / Miscibility with water:	Not miscible or difficult to mix.
- Partition coefficient: n-octanol/water:	Not determined.
- Viscosity:	
Dynamic at 20°C:	1mPas
Kinematic:	Not determined.
- 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Forms explosive gas mixture with air.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
No dangerous products of decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

- LD/LC50 values relevant for classification:

99-97-8 N,N-dimethyl-p-toluidine

Inhalative	LC50/4 h	1.4 mg/l (rat)
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- **Primary irritant effect:**
- **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.
- **Additional toxicological information:**
No experimentally found toxicological data are available for this preparation.
May cause drowsiness or dizziness.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.

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- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
 Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
 Danger to drinking water if even small quantities leak into the ground.
 Do not allow product to reach ground water, water course or undiluted sewage system.
 Also very poisonous for fish and plankton in water bodies.
 Very toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Disposal must be made according to official regulations.

- European waste catalogue

07 00 00	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 01 00	wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals
07 01 04*	other organic solvents, washing liquids and mother liquors
07 00 00	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 07 00	wastes from the MFSU of fine chemicals and chemical products not otherwise specified
07 07 04*	other organic solvents, washing liquids and mother liquors

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|---|
| <ul style="list-style-type: none"> - 14.1 UN-Number - ADR, IMDG, IATA | UN1206 |
| <ul style="list-style-type: none"> - 14.2 UN proper shipping name - ADR - IMDG - IATA | 1206 HEPTANES solution, ENVIRONMENTALLY HAZARDOUS
HEPTANES solution, MARINE POLLUTANT
HEPTANES solution |
| <ul style="list-style-type: none"> - 14.3 Transport hazard class(es) - ADR |  |
| <ul style="list-style-type: none"> - Class | 3 (F1) Flammable liquids. |

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- Label 3

- IMDG



- Class 3 Flammable liquids.

- Label 3

- IATA



- Class 3 Flammable liquids.

- Label 3

- 14.4 Packing group

- ADR, IMDG, IATA II

- 14.5 Environmental hazards: Product contains environmentally hazardous substances: heptane

- Marine pollutant: Symbol (fish and tree)

- Special marking (ADR): Symbol (fish and tree)

- 14.6 Special precautions for user Warning: Flammable liquids.

- Danger code (Kemler): 33

- EMS Number: F-E,S-D

- Stowage Category B

- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

- Transport/Additional information:

- ADR

- Limited quantities (LQ) 1L

- Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

- Transport category 2

- Tunnel restriction code D/E

- IMDG

- Limited quantities (LQ) 1L

- Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

- UN "Model Regulation": UN 1206 HEPTANES SOLUTION, 3, II, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

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

- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

- National regulations:

- Waterhazard class: Water hazard class 2 (Self-assessment): hazardous for water.

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- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases

- H225 Highly flammable liquid and vapour.
- H301 Toxic if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H311 Toxic in contact with skin.
- H315 Causes skin irritation.
- H330 Fatal if inhaled.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

- Abbreviations and acronyms:

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- DNEL: Derived No-Effect Level (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Flam. Liq. 2: Flammable liquids – Category 2
- Acute Tox. 3: Acute toxicity – Category 3
- Acute Tox. 2: Acute toxicity – Category 2
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Carc. 2: Carcinogenicity – Category 2
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
- Asp. Tox. 1: Aspiration hazard – Category 1
- Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
- Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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

- 1.1 Product identifier

- Trade name: ergo 5100 Aerosol

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

No further relevant information available.

- Application of the substance / the mixture Activator

- 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:

Kisling AG

Motorenstrasse 102

CH-8620 Wetzikon

Telefon: +41-(0) 58-272 0 272

Telefax: +41-(0) 58-272 0 273

- Further information obtainable from: Safety Department

- Department issuing MSDS: ergo@kisling.com

- 1.4 Emergency telephone number: Tox Info Suisse: 145 / +41-44-2 51 51 51

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture

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

Aerosol 1	H222-H229	Extremely flammable aerosol. Pressurised container: May burst if heated.
Skin Irrit. 2	H315	Causes skin irritation.
STOT SE 3	H336	May cause drowsiness or dizziness.
Asp. Tox. 1	H304	May be fatal if swallowed and enters airways.
Aquatic Acute 1	H400	Very toxic to aquatic life.
Aquatic Chronic 1	H410	Very toxic to aquatic life with long lasting effects.

- 2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

- Hazard pictograms



GHS02 GHS07 GHS08 GHS09

- Signal word Danger

- Hazard-determining components of labelling:

heptane

- Hazard statements

H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

H410 Very toxic to aquatic life with long lasting effects.

- Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P261 Avoid breathing spray.

P405 Store locked up.

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

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- Labelling of packages where the contents do not exceed 125 ml
- Hazard pictograms



GHS02 GHS07 GHS08 GHS09

- Signal word Danger

- Hazard-determining components of labelling:

heptane

- Hazard statements

H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.

H304 May be fatal if swallowed and enters airways.

- Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P331 Do NOT induce vomiting.

P405 Store locked up.

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

- 2.3 Other hazards

- Results of PBT and vPvB assessment

- PBT: Not applicable.

- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- Description: Active substance with propellant

- Dangerous components:

CAS: 106-97-8 EINECS: 203-448-7 Index number: 601-004-00-0	butane Flam. Gas 1, H220; Acute Tox. 3, H331; Press. Gas C, H280	30-<50%
CAS: 142-82-5 EINECS: 205-563-8 Index number: 601-008-00-2	heptane Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; STOT SE 3, H336	25-<30%
CAS: 74-98-6 EINECS: 200-827-9 Index number: 601-003-00-5	propane Flam. Gas 1, H220; Press. Gas C, H280	10-<15%
CAS: 75-28-5 EINECS: 200-857-2 Index number: 601-004-00-0	isobutane Flam. Gas 1, H220; Acute Tox. 3, H331; Press. Gas C, H280	10-<15%
CAS: 99-97-8 EINECS: 202-805-4 Index number: 612-056-00-9	N,N-dimethyl-p-toluidine Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 2, H330; Carc. 2, H351; STOT RE 2, H373; Aquatic Chronic 3, H412	0.1-<1%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures

- General information: Immediately remove any clothing soiled by the product.

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- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
After contact with skin, wash immediately with plenty of soap and water.
If skin irritation continues, consult a doctor.
- **After eye contact:**
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
- **Additional information**
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources.
Avoid contact with the eyes and skin.
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb liquid components with liquid-binding material.
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
Fumes can combine with air to form an explosive mixture.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 10 for information on "stability and reactivity".
See Section 13 for disposal information.

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SECTION 7: Handling and storage

- 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

- Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Buildup of explosive mixtures possible without sufficient ventilation.

Do not spray onto a naked flame or any incandescent material.

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

- 7.2 Conditions for safe storage, including any incompatibilities

- Storage:

- Requirements to be met by storerooms and receptacles:

Store in a cool location.

Observe official regulations on storing packagings with pressurised containers.

- Information about storage in one common storage facility: Not required.

- Further information about storage conditions:

Protect from heat and direct sunlight.

Store under lock and key and out of the reach of children.

Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

- Storage class (TRGS 510, Storage of hazardous substances in non-stationary containers): 2 B

- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- 8.1 Control parameters

- Ingredients with limit values that require monitoring at the workplace:

106-97-8 butane

MAK (Switzerland)	Short-term value: 7600 mg/m ³ , 3200 ppm
	Long-term value: 1900 mg/m ³ , 800 ppm

142-82-5 heptane

MAK (Switzerland)	Short-term value: 1600 mg/m ³ , 400 ppm
	Long-term value: 1600 mg/m ³ , 400 ppm

74-98-6 propane

MAK (Switzerland)	Short-term value: 7200 mg/m ³ , 4000 ppm
	Long-term value: 1800 mg/m ³ , 1000 ppm

75-28-5 isobutane

MAK (Switzerland)	Short-term value: 7600 mg/m ³ , 3200 ppm
	Long-term value: 1900 mg/m ³ , 800 ppm

- DNELs

142-82-5 heptane

Oral	Langzeit, Systemische Effekte	149 mg/kg bw/day (all)
Dermal	Langzeit, Systemische Effekte	149 mg/kg bw/day (all) 300 mg/kg bw/day (ber)
Inhalative	Langzeit, Systemische Effekte	447 mg/m ³ (all) 2,085 mg/m ³ (ber)

- Additional information: The lists valid during the making were used as basis.

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- 8.2 Exposure controls

- Personal protective equipment:

- General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- Respiratory protection:

Use suitable respiratory protective device in case of insufficient ventilation.

Filter AX

- Protection of hands:

Protective gloves (EN 374)

Check protective gloves prior to each use for their proper condition.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves

Find below a list of appropriate protective gloves for chemical surrounding:

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Permeation time / penetration time: = 480 minutes (DIN EN 374):

Chloropren Nitril II, Nr. 0717

Nitril I, Nr. 0730, 0732, 0733, 0736, 0737, 0738, 0739 oder 0836

Viton, Nr. 0890

.

Permeation time / penetration time: = 120 minutes (DIN EN 374):

Nitril VI, Nr. 0754

.

of KCL company (e-mail: vertrieb@kcl.de).

The recommendation is based exclusively on the chemical compatibility and the test according to EN374 under laboratory conditions.

Requirements can vary according to the use. Therefore, please always take into account the glove supplier's recommendations.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Permeation time / penetration time: see above (material of gloves)

- Eye protection: Avoid contact with the eyes.

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties

- General Information

- Appearance:

Form: Aerosol

Colour: Yellowish

- Odour: Petrol-like

- Odour threshold: Not determined.

- pH-value: Not determined.

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- Change in condition**Melting point/freezing point:** Not applicable, as aerosol.**Initial boiling point and boiling range:** Not applicable, as aerosol.**- Flash point:**

Not applicable, as aerosol.

- Flammability (solid, gas):

Not applicable.

- Ignition temperature:**Decomposition temperature:**

Not determined.

- Auto-ignition temperature:

Product is not self-igniting.

- Explosive properties:

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

Buildup of explosive mixtures possible without sufficient ventilation.

- Explosion limits:**Lower:**

Not determined.

Upper:

Not determined.

- Vapour pressure:

Not determined.

- Density at 20°C:0,7g/cm³**- Relative density**

Not determined.

- Vapour density

Not determined.

- Evaporation rate

Not applicable.

- Solubility in / Miscibility with water:

Not miscible or difficult to mix.

- Partition coefficient: n-octanol/water:

Not determined.

- Viscosity:**Dynamic:**

Not determined.

Kinematic:

Not determined.

- 9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity**- 10.1 Reactivity** No further relevant information available.**- 10.2 Chemical stability****- Thermal decomposition / conditions to be avoided:** Protect from heat and direct sunlight.**- 10.3 Possibility of hazardous reactions**

Danger of bursting.

Forms explosive gas mixture with air.

- 10.4 Conditions to avoid No further relevant information available.**- 10.5 Incompatible materials:** No further relevant information available.**- 10.6 Hazardous decomposition products:**

No dangerous products of decomposition if used and stored according to specifications.

SECTION 11: Toxicological information**- 11.1 Information on toxicological effects****- Acute toxicity** Based on available data, the classification criteria are not met.

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- LD/LC50 values relevant for classification:
106-97-8 butane

Inhalative	LC50/4 h	658 mg/l (rat)
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99-97-8 N,N-dimethyl-p-toluidine

Inhalative	LC50/4 h	1.4 mg/l (rat)
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- Primary irritant effect:
- 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.

- Additional toxicological information:

No experimentally found toxicological data are available for this preparation.

May cause drowsiness or dizziness.

- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- 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.

SECTION 12: Ecological information

- 12.1 Toxicity
- Aquatic toxicity: No further relevant information available.

- 12.2 Persistence and degradability No further relevant information available.

- 12.3 Bioaccumulative potential No further relevant information available.

- 12.4 Mobility in soil No further relevant information available.

- Ecotoxicological effects:
- Remark: Very toxic for fish

- Additional ecological information:
- General notes:

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Danger to drinking water if even small quantities leak into the ground.

Do not allow product to reach ground water, water course or undiluted sewage system.

Water hazard class (German Regulation) is valid for the active agent.

Also very poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

- 12.5 Results of PBT and vPvB assessment
- PBT: Not applicable.

- vPvB: Not applicable.

- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
- Recommendation Disposal must be made according to official regulations.

- European waste catalogue

16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
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16 05 00	gases in pressure containers and discarded chemicals
----------	--

16 05 04*	gases in pressure containers (including halons) containing hazardous substances
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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- 14.1 UN-Number

- ADR, IMDG, IATA

UN1950

- 14.2 UN proper shipping name

- ADR

1950 AEROSOLS, ENVIRONMENTALLY HAZARDOUS

- IMDG

AEROSOLS, MARINE POLLUTANT

- IATA

AEROSOLS, flammable

- 14.3 Transport hazard class(es)

- ADR



- Class

2 5F Gases.

- Label

2.1

- IMDG



- Class

2 Gases.

- Label

2.1

- IATA



- Class

2.1

- Label

2.1

- 14.4 Packing group

- ADR, IMDG, IATA

Void

- 14.5 Environmental hazards:

Product contains environmentally hazardous substances: heptane

- Marine pollutant:

Symbol (fish and tree)

- Special marking (ADR):

Symbol (fish and tree)

- 14.6 Special precautions for user

Warning: Gases.

- EMS Number:

F-D,S-U

- Stowage Code

SW1 Protected from sources of heat.

SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.

- Segregation Code

SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate

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-	subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
- Transport/Additional information:	
- ADR	
- Limited quantities (LQ)	1L
- Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
- Transport category	2
- Tunnel restriction code	D
- IMDG	
- Limited quantities (LQ)	1L
- Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
- UN "Model Regulation":	UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **National regulations:**
- **Waterhazard class:**
Water hazard class 2 (Self-assessment): hazardous for water.
Water hazard class (German Regulation) is valid for the active agent.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases

- H220 Extremely flammable gas.
- H225 Highly flammable liquid and vapour.
- H280 Contains gas under pressure; may explode if heated.
- H301 Toxic if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H311 Toxic in contact with skin.
- H315 Causes skin irritation.
- H330 Fatal if inhaled.
- H331 Toxic if inhaled.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

- Abbreviations and acronyms:

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association

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GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Gas 1: Flammable gases – Category 1
Aerosol 1: Aerosols – Category 1
Press. Gas C: Gases under pressure – Compressed gas
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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