Safety Data Sheet according to (EC) No 1907/2006 as amended

SDS No. : 280431
V002.2

LOCTITE LB 8154 known as Loctite 8154

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

1.1. Product identifier

LOCTITE LB 8154 known as Loctite 8154
UFI: V9U1-SXFN-N20N-6MD0

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

Intended use:
Lubricant

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA
Henkelstr. 67
40589 Düsseldorf

Germany

Phone: +49 211 797 0

SDSinfo.Adhesive@henkel.com
For Safety Data Sheet updates please visit our website www.mysds.henkel.com or www.henkel-adhesives.com.

1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Flammable aerosols	Category 1
H222 Extremely flammable aerosol.	
H229 Pressurized container: May burst if heated.	
Specific target organ toxicity - single exposure	Category 3
H336 May cause drowsiness or dizziness.	
Target organ: Central nervous system	
Chronic hazards to the aquatic environment	Category 3
H412 Harmful to aquatic life with long lasting effects.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains pentane

Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics

Signal word: Danger

Hazard statement:
H222 Extremely flammable aerosol.
H229 Pressurized container: May burst if heated.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Supplemental information
EUH066 Repeated exposure may cause skin dryness or cracking.
Contains: Polysulfides, di-tert-Bu May produce an allergic reaction.

Precautionary statement:
P251 Do not pierce or burn, even after use.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50.DEGREE.C/122.DEGREE.F.
P211 Do not spray on an open flame or other ignition source.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P102 Keep out of reach of children.
"***" ***For consumer use only: P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P501 Dispose of contents/container in accordance with national regulation.***

Precautionary statement: Prevention
P273 Avoid release to the environment.
P261 Avoid breathing spray.

2.3. Other hazards

None if used properly.

Following substances are present in a concentration ≥ the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration ≥ the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Butane, n- (< 0.1 % butadiene) 106-97-8 203-448-7 01-2119474691-32	25- < 50 %	Press. Gas H280 Flam. Gas 1A, H220		
Propane 74-98-6 200-827-9 01-2119486944-21	10- < 25 %	Flam. Gas 1A, H220 Press. Gas H280		
pentane 109-66-0 203-692-4 01-2119459286-30	10- < 25 %	Flam. Liq. 2, H225 Asp. Tox. 1, H304 STOT SE 3, H336 Aquatic Chronic 2, H411		EU OEL
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics 927-241-2 01-2119471843-32	10- < 25 %	Asp. Tox. 1, H304 Flam. Liq. 3, H226 STOT SE 3, H336 Aquatic Chronic 3, H412		
Isobutane 75-28-5 200-857-2 01-2119485395-27	2,5- < 10 %	Flam. Gas 1A, H220 Press. Gas Liquef. Gas, H280		
Polysulfides, di-tert-Bu 68937-96-2 273-103-3 01-2119540515-43	0- < 1 %	Skin Sens. 1, H317 Aquatic Chronic 3, H412	oral:ATE = 2.500 mg/kg	

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.
For full text of the H - statements and other abbreviations see section 16 "Other information".

The hazard classification of this product is based solely on the mixture present within the aerosol, excluding the propellant gases. The information provided in Section 3 is based on the combination of the mixture and propellant gases.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:
Rinse with running water and soap.
Obtain medical attention if irritation persists.

Eye contact:
Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:
Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed
Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

Repeated exposure may cause skin dryness or cracking.

Vapors may cause drowsiness and dizziness.

4.3. Indication of any immediate medical attention and special treatment needed
See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:
High pressure waterjet

5.2. Special hazards arising from the substance or mixture
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

5.3. Advice for firefighters
Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Additional information:
In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes.
Wear protective equipment.
Ensure adequate ventilation.
Keep away from sources of ignition.

6.2. Environmental precautions
Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up
Dispose of contaminated material as waste according to Section 13.
For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.

6.4. Reference to other sections
See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid skin and eye contact.
See advice in section 8

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities
Store in a cool, dry place.
Do not store near sources of heat or ignition, or reactive materials.
Refer to Technical Data Sheet.

7.3. Specific end use(s)
Lubricant

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Germany

Ingredient [Regulated substance]	ppm	mg/m^3	Value type	Short term exposure limit category / Remarks	Regulatory list
Butane 106-97-8	1.000	2.400	Exposure limit(s):	4	TRGS 900
Butane 106-97-8			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Pentane 109-66-0 [PENTANE]	1.000	3.000	Time Weighted Average (TWA):	Indicative	ECTLV
Pentane 109-66-0	1.000	3.000	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Pentane 109-66-0			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Propane 74-98-6	1.000	1.800	Exposure limit(s):	4	TRGS 900
Propane 74-98-6			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Isobutane 75-28-5			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Isobutane 75-28-5	1.000	2.400	Exposure limit(s):	4	TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
pentane 109-66-0	aqua (freshwater)		0,23 mg/l				
pentane 109-66-0	aqua (marine water)		0,23 mg/l				
pentane 109-66-0	aqua (intermittent releases)		0,88 mg/l				
pentane 109-66-0	sediment (freshwater)				1,2 mg/kg		
pentane 109-66-0	sediment (marine water)				1,2 mg/kg		
pentane 109-66-0	Soil				0,55 mg/kg		
pentane 109-66-0	sewage treatment plant (STP)		3,6 mg/l				
pentane 109-66-0	Air						no hazard identified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	aqua (freshwater)						
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	aqua (marine water)						
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	sediment (freshwater)						
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	sediment (marine water)						
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	Air						no hazard identified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	soil						
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	Predator						

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
pentane 109-66-0	Workers	dermal	Long term exposure - systemic effects		432 mg/kg	no hazard identified
pentane 109-66-0	Workers	inhalation	Long term exposure - systemic effects		3000 mg/m3	no hazard identified
pentane 109-66-0	General population	dermal	Long term exposure - systemic effects		214 mg/kg	no hazard identified
pentane 109-66-0	General population	inhalation	Long term exposure - systemic effects		643 mg/m3	no hazard identified
pentane 109-66-0	General population	oral	Long term exposure - systemic effects		214 mg/kg	no hazard identified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	Workers	inhalation	Long term exposure - systemic effects		871 mg/m3	no hazard identified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	Workers	dermal	Long term exposure - systemic effects		77 mg/kg	no hazard identified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	General population	inhalation	Long term exposure - systemic effects		185 mg/m3	no hazard identified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	General population	dermal	Long term exposure - systemic effects		46 mg/kg	no hazard identified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	General population	oral	Long term exposure - systemic effects		46 mg/kg	no hazard identified

Biological Exposure Indices:
None

8.2. Exposure controls:

Engineering controls:
Ensure good ventilation/extraction.

Respiratory protection:
Ensure adequate ventilation.
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area
Filter type: A (EN 14387)

Hand protection:
Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.
Protective eye equipment should conform to EN166.

Skin protection:
Wear suitable protective clothing.
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:
The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Delivery form	aerosol
Delivery form	aerosol
Colour	black
Colour	black
Odor	Oily
Odor	characteristic
Physical state	liquid
Melting point	Not applicable, Product is a liquid
Solidification temperature	Not available.
Initial boiling point	-44,5 °C (-48.1 °F)
Flammability	Extremely flammable aerosol.
Explosive limits	
lower	1,40 %(V);
upper	10,90 %(V);
Flash point	-97 °C (-142.6 °F)
Auto-ignition temperature	285 °C (545 °F)
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH	Not applicable, Product is non-polar/aprotic.
Viscosity (kinematic) (40 °C (104 °F);)	<= 20,5 mm2/s
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Not miscible or difficult to mix
Partition coefficient: n-octanol/water	Not applicable Mixture
Vapour pressure (20 °C (68 °F))	2950 hPa
Vapour pressure (50 °C (122 °F))	7000 hPa
Density (20 °C (68 °F))	0,661 g/cm3 None
Relative vapour density:	Not available.
Particle characteristics	Not applicable Product is a liquid

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Aerosols:	Classified as Aerosol category 1 because it contains more than 1 % (by mass) flammable components or has a heat of combustion of at least 20 kJ/g and is not submitted to the flammability classification procedures

SECTION 10: Stability and reactivity

10.1. Reactivity
None if used properly.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity

10.4. Conditions to avoid
Stable under normal conditions of storage and use.

10.5. Incompatible materials
See section reactivity.

10.6. Hazardous decomposition products
None if used for intended purpose.

SECTION 11: Toxicological information

General toxicological information:
Prolonged or repeated contact may cause skin irritation.
Prolonged or repeated contact may cause eye irritation.

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

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
pentane 109-66-0	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	LD50	> 5.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Polysulfides, di-tert-Bu 68937-96-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Polysulfides, di-tert-Bu 68937-96-2	Acute toxicity estimate (ATE)	2.500 mg/kg		Expert judgement

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	LD50	> 5.000 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
Polysulfides, di-tert-Bu 68937-96-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
Butane, n- (< 0.1 % butadiene) 106-97-8	LC50	274200 ppm	gas	4 h	rat	not specified
Propane 74-98-6	LC50	> 800000 ppm	gas	15 min	rat	not specified
pentane 109-66-0	LC50	21000 ppm	vapour	4 h	rat	not specified
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	LC50	> 6,1 mg/l	vapour	4 h	rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
Isobutane 75-28-5	LC50	260200 ppm	gas	4 h	mouse	not specified

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
pentane 109-66-0	not irritating	4 h	rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
pentane 109-66-0	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
pentane 109-66-0	not sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Polysulfides, di-tert-Bu 68937-96-2	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Butane, n- (< 0.1 % butadiene) 106-97-8	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Butane, n- (< 0.1 % butadiene) 106-97-8	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Propane 74-98-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Propane 74-98-6	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
pentane 109-66-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
pentane 109-66-0	negative	in vitro mammalian chromosome aberration test	with and without		EU Method B.10 (Mutagenicity)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	negative	in vitro mammalian chromosome aberration test	with and without		equivalent or similar to OECD Guideline 479 (Genetic Toxicology: In Vitro Sister Chromatid Exchange Assay in Mammalian Cells)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	negative	in vitro mammalian chromosome aberration test	with and without		equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	negative	mammalian cell gene mutation assay	with and without		equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Isobutane 75-28-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Isobutane 75-28-5	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	not carcinogenic	inhalation: vapour	6 hours plus T90 (12 minutes) 5 days per week for 105 weeks	rat	male/female	equivalent or similar OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Butane, n- (< 0.1 % butadiene) 106-97-8	NOAEL P 21,4 mg/l NOAEL F1 21,4 mg/l	screening	inhalation: gas	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Propane 74-98-6	NOAEL P 21,6 mg/l NOAEL F1 21,6 mg/l	screening	inhalation: gas	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
pentane 109-66-0	NOAEL P >= 1.000 mg/kg NOAEL F1 >= 1.000 mg/kg	one-generation study	oral: gavage	rat	OECD Guideline 415 (One-Generation Reproduction Toxicity Study)
Isobutane 75-28-5	NOAEL P 21,4 mg/l NOAEL F1 21,4 mg/l	screening	inhalation: gas	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure:

No data available.

STOT-repeated exposure:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Butane, n- (< 0.1 % butadiene) 106-97-8		inhalation: gas	28 d 6 h/d	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Propane 74-98-6		inhalation: gas	28 d 6 h/d, 7 d/w	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
pentane 109-66-0		inhalation: gas	13 w 6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	NOAEL >= 1.000 mg/kg	oral: gavage	7 days/week	rat	equivalent or similar to OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reprod./Develop. Tox. Screening Test)
Isobutane 75-28-5	NOAEL 9000 ppm	inhalation: gas	28 d 6 h/d, 7 d/w	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:
Do not empty into drains / surface water / ground water.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Butane, n- (< 0.1 % butadiene) 106-97-8	LC50	27,98 mg/l	96 h		QSAR (Quantitative Structure Activity Relationship)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	LL50	> 10 - < 30 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)

Toxicity (aquatic invertebrates):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Butane, n- (< 0.1 % butadiene) 106-97-8	EC50	14,22 mg/l	48 h		QSAR (Quantitative Structure Activity Relationship)
pentane 109-66-0	EC50	9,74 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	EL50	> 22 - < 46 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Polysulfides, di-tert-Bu 68937-96-2	EL50	63 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity (aquatic invertebrates):

No data available.

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Butane, n- (< 0.1 % butadiene) 106-97-8	EC50	7,71 mg/l	96 h		QSAR (Quantitative Structure Activity Relationship)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	EL50	> 1000 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	NOELR	< 1 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Polysulfides, di-tert-Bu 68937-96-2	EL50	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Polysulfides, di-tert-Bu 68937-96-2	NOELR	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity (microorganisms):

No data available.

12.2. Persistence and degradability

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Butane, n- (< 0.1 % butadiene) 106-97-8	readily biodegradable	aerobic	> 60 %	28 d	OECD 301 A - F
Propane 74-98-6	readily biodegradable	aerobic	> 60 %	28 d	OECD 301 A - F
pentane 109-66-0	readily biodegradable	aerobic	87 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	readily biodegradable	aerobic	89 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Isobutane 75-28-5	readily biodegradable	aerobic	> 60 %	28 d	OECD 301 A - F
Polysulfides, di-tert-Bu 68937-96-2	not readily biodegradable.	aerobic	13 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

The table below presents the data of the classified substances present in the mixture.

Hazardous substances **CAS-No.**	**LogPow**	**Temperature**	**Method**
Butane, n- (< 0.1 % butadiene) 106-97-8	2,31	20 °C	other (measured)
pentane 109-66-0	3,45	25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Isobutane 75-28-5	2,88	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

12.5. Results of PBT and vPvB assessment

The table below presents the data of the classified substances present in the mixture.

Hazardous substances **CAS-No.**	**PBT / vPvB**
Butane, n- (< 0.1 % butadiene) 106-97-8	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Propane 74-98-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
pentane 109-66-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Hydrocarbons , C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Isobutane 75-28-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:
Do not empty into drains / surface water / ground water.
Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:
After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

14 06 03 Other solvents and solvent mixtures
The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number or ID number

ADR	1950
RID	1950
ADN	1950
IMDG	1950
IATA	1950

14.2. UN proper shipping name

ADR	AEROSOLS
RID	AEROSOLS
ADN	AEROSOLS
IMDG	AEROSOLS
IATA	Aerosols, flammable

14.3. Transport hazard class(es)

ADR	2.1
RID	2.1
ADN	2.1
IMDG	2.1
IATA	2.1

14.4. Packing group

ADR
RID
ADN
IMDG
IATA

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode: (D)
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable

VOC content (2010/75/EC)	76,5 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK:	WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV)) Classification according to AwSV, Annex 1 (5.2)
Storage class according to TRGS 510:	2B

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H220 Extremely flammable gas.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

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