

SAFETY DATA SHEET

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

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Mabanol Trockenkettenspray

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

1.1. Product identifier

Trade name/designation:

Mabanol Trockenkettenspray

Other means of identification:

Mabanol Dry Chain Spray

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

Use of the substance/mixture:

Lubricating agent

Kettenspray / Chain Spray

1.3. Details of the supplier of the safety data sheet

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

Mabanol GmbH & Co. KG

Koreastraße 7

20457 Hamburg

Germany

Telephone: 0049 (0) 40 36809988

E-mail: info@mabanol.com

Website: www.mabanol.com

1.4. Emergency telephone number

Giftinformationszentrale Göttingen , 24h: 0049 (0) 551 1 92 40

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols (<i>Aerosol 1</i>)	H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated.	
Skin corrosion/irritation (<i>Skin Irrit. 2</i>)	H315: Causes skin irritation.	
Respiratory or skin sensitisation (<i>Skin Sens. 1B</i>)	H317: May cause an allergic skin reaction.	
STOT-single exposure (<i>STOT SE 3</i>)	H336: May cause drowsiness or dizziness.	
Hazardous to the aquatic environment (<i>Aquatic Chronic 2</i>)	H411: Toxic to aquatic life with long lasting effects.	

2.2. Label elements

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

Hazard pictograms:



GHS02
Flame



GHS07
Exclamation mark



GHS09
Environment

Signal word: Danger

Hazard components for labelling:

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane; Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics; Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts

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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.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.

Hazard statements for environmental hazards

H411	Toxic to aquatic life with long lasting effects.
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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.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.

Precautionary Statements Response

P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/... if you feel unwell.

Precautionary Statements Storage

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

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

2.3. Other hazards

No data available

SECTION 3: Composition / information on ingredients

* 3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 75-28-5 EC No.: 200-857-2 REACH No.: 01-2119485395-27	isobutane Flam. Gas 1, Press. Gas (Liq.) Danger H220-H280	25 - < 50 weight-%
CAS No.: 64742-49-0 EC No.: 921-024-6 REACH No.: 01-2119475514-35	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane Aquatic Chronic 2, Asp. Tox. 1, Flam. Liq. 2, STOT SE 3, Skin Irrit. 2 H225-H304-H315-H336-H411	20 - < 25 weight-%
CAS No.: 64742-49-0 EC No.: 927-510-4 REACH No.: 01-2119475515-33	Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics Aquatic Chronic 2, Asp. Tox. 1, Flam. Liq. 2, STOT SE 3, Skin Irrit. 2 H225-H304-H315-H336-H411	20 - < 25 weight-%

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product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 74-98-6 EC No.: 200-827-9 REACH No.: 01-2119486944-21	propane Flam. Gas 1, Press. Gas (Liq.) Danger H220-H280	5 - < 10 weight-%
CAS No.: 106-97-8 EC No.: 203-448-7 REACH No.: 01-2119474691-32	butane Flam. Gas 1, Press. Gas (Liq.) Danger H220-H280	1 - < 3 weight-%
CAS No.: 70024-69-0 EC No.: 274-263-7 REACH No.: 01-2119492616-28	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts Skin Sens. 1B H317	0.1 - < 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:

First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

Following inhalation:

Remove person to fresh air and keep comfortable for breathing. When in doubt or if symptoms are observed, get medical advice.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. When in doubt or if symptoms are observed, get medical advice.

After eye contact:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

After ingestion:

Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

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

Headache. Nausea. Dizziness. Causes skin irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water mist. Foam. Carbon dioxide (CO₂). Extinguishing powder.

Unsuitable extinguishing media:

Full water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products:

In case of fire: Gases/vapours, toxic.

In case of fire may be liberated: Carbon dioxide (CO₂). Carbon monoxide. aldehydes. carbon black.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Do not inhale explosion and combustion gases. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use personal protection equipment.

6.1.2. For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

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.

6.4. Reference to other sections

Safe handling: see section 7

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Observe instructions for use. Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means. When using do not eat, drink, smoke, sniff. Wear personal protection equipment (refer to section 8).

Fire prevent measures:

Keep away from sources of ignition - No smoking.

Advices on general occupational hygiene

When using do not eat, drink or smoke. Avoid contact with eyes and skin. Wear suitable protective clothing. Draw up and observe skin protection programme.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed. Store in a cool dry place.

Hints on storage assembly:

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances. Food and feedingstuffs.

7.3. Specific end use(s)

No data available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
TRGS 900 (DE)	isobutane CAS No.: 75-28-5	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³)
TRGS 900 (DE)	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane CAS No.: 64742-49-0	① 700 mg/m ³ ② 1,400 mg/m ³ ⑤ (C6-C8 Aliphaten)
TRGS 900 (DE)	Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics CAS No.: 64742-49-0	① 700 mg/m ³ ② 1,400 mg/m ³ ⑤ (C6-C8 Aliphaten)
TRGS 900 (DE)	propane CAS No.: 74-98-6	① 1,000 ppm (1,800 mg/m ³) ② 4,000 ppm (7,200 mg/m ³)
TRGS 900 (DE)	butane CAS No.: 106-97-8	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	11.75 mg/m ³	① DNEL worker ② inhalative, long-term, systemic
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	2.9 mg/m ³	① DNEL Consumer ② inhalative, long-term, systemic
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	3.33 mg/kg bw/day	① DNEL worker ② dermal, long-term, systemic
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	1.667 mg/kg bw/day	① DNEL Consumer ② dermal, long-term, systemic

Substance name	PNEC Value	① PNEC type
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	1 mg/l	① PNEC aquatic, freshwater
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	1 mg/l	① PNEC aquatic, marine water
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	1,000 mg/l	① PNEC sewage treatment plant
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	16.667 mg/kg bw/day	① PNEC secondary poisoning

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Substance name	PNEC Value	① PNEC type
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts CAS No.: 70024-69-0	10 mg/l	① PNEC aquatic, intermittent release

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No data available

8.2.2. Personal protection equipment

Eye/face protection:

Eye glasses with side protection (DIN EN 166).

Skin protection:

Tested protective gloves must be worn (EN ISO 374). Suitable material: NBR (Nitrile rubber).

Breakthrough time (maximum wearing time): 480 min. Thickness of the glove material: 0,45 mm.

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. 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.

Wear suitable protective clothing.

Respiratory protection:

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Respiratory protection necessary at: exceeding exposure limit values. Suitable respiratory protection apparatus: Combination filtering device (EN 14387). Filtering device with filter or ventilator filtering device of type: AX.

Observe the wear time limits as specified by the manufacturer.

8.2.3. Environmental exposure controls

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Aerosol

Colour: beige

Odour: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	not determined			
Melting point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	-42 °C			
Decomposition temperature	not determined			
Flash point	-80 °C			
Evaporation rate	not determined			
Auto-ignition temperature	not determined			
Upper/lower flammability or explosive limits	1.1 - 9.4 Vol-%			
Vapour pressure	not determined			
Vapour density	not determined			
Density	0.7175 g/cm ³	20 °C	DIN 51757	
Bulk density	not determined			
Water solubility	not determined			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	7 mm ² /s			

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9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

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 heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.

10.5. Incompatible materials

Oxidizing agent. Pyrophoric or self-heating substances

10.6. Hazardous decomposition products

In case of fire may be liberated: Carbon monoxide. Carbon dioxide (CO₂). aldehydes. carbon black. Gases/vapours, toxic.

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

* 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	LD₅₀ oral: >5,000 mg/kg (Rat) LD₅₀ dermal: >2,000 mg/kg (Rabbit) LC₅₀ Acute inhalation toxicity (vapour): >23.3 mg/l 4 h (Rat)
64742-49-0	Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics	LD₅₀ oral: 5,500 mg/kg (Rat) LD₅₀ dermal: 2,770 mg/kg (Rat) LC₅₀ Acute inhalation toxicity (vapour): 23.3 mg/l 4 h (Rat)
106-97-8	butane	LC₅₀ Acute inhalation toxicity (gas): 658 ppmV 4 h (Rat)
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	LD₅₀ oral: >5,000 mg/kg (Rat) LD₅₀ dermal: >2,000 mg/kg (Rabbit)

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 burns.

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Serious eye damage/irritation:

Based on available data, the classification criteria are not met.
Serious eye damage/irritation.

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

Germ cell mutagenicity:

Based on available data, the classification criteria are not met.
No indications of human germ cell mutagenicity exist.

Carcinogenicity:

Based on available data, the classification criteria are not met.
No indication of human carcinogenicity.

Reproductive toxicity:

Based on available data, the classification criteria are not met.
No indications of human reproductive toxicity exist.

STOT-single exposure:

May cause drowsiness or dizziness.

STOT-repeated exposure:

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

Aspiration hazard:

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

Additional information:

Frequently or prolonged contact with skin may cause dermal irritation.

SECTION 12: Ecological information

* 12.1. Toxicity

CAS No.	Substance name	Toxicological information
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	LC₅₀: >1 - 10 mg/l 4 d (fish, Pimephales promelas (fathead minnow)) ErC₅₀: >10 - 100 mg/l 3 d (Algae/water plant, Pseudokirchneriella subcapitata) EC₅₀: >1 - 10 mg/l 2 d (crustaceans, Daphnia magna (Big water flea))
64742-49-0	Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics	LC₅₀: >1 - 10 mg/l 4 d (fish, Oncorhynchus mykiss (Rainbow trout)) ErC₅₀: >10 - 100 mg/l 3 d (Algae/water plant) EC₅₀: >1 - 10 mg/l 2 d (crustaceans, Daphnia magna (Big water flea))
74-98-6	propane	LC₅₀: 49.9 mg/l 4 d (fish) ErC₅₀: 19.4 mg/l 4 d (Algae/water plant) EC₅₀: 69.4 mg/l 2 d (crustaceans)
106-97-8	butane	LC₅₀: 49.9 mg/l 4 d (fish) ErC₅₀: 19.37 mg/l 4 d (Algae/water plant) EC₅₀: 69.43 mg/l 2 d (crustaceans)
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	EC₅₀: >1,000 mg/l 2 d (crustaceans, Daphnia magna (Big water flea)) LC₅₀: >1,000 mg/l 4 d (fish) ErC₅₀: >1,000 mg/l 3 d (Algae/water plant)

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12.2. Persistence and degradability

CAS No.	Substance name	Biodegradation	Remark
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	—	Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

CAS No.	Substance name	Log K _{OW}	Bioconcentration factor (BCF)
75-28-5	isobutane	2.8	
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	3.4	
74-98-6	propane	1.09	
106-97-8	butane	2.89	
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	22.12	

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

CAS No.	Substance name	Results of PBT and vPvB assessment
75-28-5	isobutane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
64742-49-0	Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
74-98-6	propane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
106-97-8	butane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
70024-69-0	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.

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

12.6. 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. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

16 05 04 *	Gases in pressure containers (including halons) containing hazardous substances
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*: Evidence for disposal must be provided.

Waste code packaging:

15 01 04	Metallic packaging
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Waste treatment options

Appropriate disposal / Product:

Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

Handle contaminated packages in the same way as the substance itself.

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SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN-No.			
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			
No data available			
14.5. Environmental hazards			
		 MARINE POLLUTANT	
14.6. Special precautions for user			
Special provisions: 190, 327, 344, 625 Limited quantity (LQ): 1 L Excepted Quantities (EQ): E0 Hazard identification number (Kemler No.): Classification code: 5F tunnel restriction code: (D) Remark: Warning: Flammable gases.	Special provisions: 190, 327, 344, 625 Limited quantity (LQ): 1 L Excepted Quantities (EQ): E0 Classification code: 5F Remark: Warning: Flammable gases.	Special provisions: 63, 190, 277, 327, 344, 381, 959 Limited quantity (LQ): 1000 mL Excepted Quantities (EQ): E0 EmS-No.: F-D, , S-U Remark: Warning: Flammable gases.	Special provisions: A145, A167, A802 Limited quantity (LQ): Airfreight transport prohibited by IATA. Excepted Quantities (EQ): E0 Remark: Airfreight transport prohibited by IATA. Warning: Flammable gases.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable.

Additional information:

ENVIRONMENTALLY HAZARDOUS. Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane (CAS 64742-49-0)

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SECTION 15: Regulatory information

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

15.1.1. EU legislation

Restrictions on use:

Use restriction according to REACH annex XVII, no.:

28: isobutane; Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane;

Hydrocarbons, C7, n-alkanes, iso-alkanes, cyclics; butane

Other regulations (EU):

Aerosol directive (75/324/EEC).

Directive 2010/75/EU on industrial emissions (VOC): No information available.

2004/42/EG (VOC): No information available.

15.1.2. National regulations

[DE] National regulations

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Remark:

Self-classification (mixture; calculation rule).

15.2. Chemical Safety Assessment

No data available

SECTION 16: Other information

16.1. Indication of changes

3.2.	Mixtures
8.1.	Control parameters
11.1.	Information on toxicological effects
12.1.	Toxicity

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16.2. Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
ADR: Accord européen sur le transport des marchandises dangereuses par Route (International Carriage of Dangerous Goods by Road)
AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen
CAS Chemical Abstracts Service
DNEL: Derived No Effect Level
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LOAEL: Lowest observed adverse effect level
LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NIOSH: National Institute of Occupational Safety and Health
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NTP: National Toxicology Program
N/A: not applicable
OEL: Occupational Exposure limit (Arbeitsplatzgrenzwert)
OSHA: Occupational Safety and Health Administration
PEL: permissible exposure limit (Zulässiger Expositionsgrenzwert)
PBT: persistent bioaccumulative toxic
PNEC: predicted no effect concentration
REL: Recommended exposure limit (Empfohlene Expositionsgrenze)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit (Kurzzeitgrenzwert) (15 min)
SVHC: substance of very high concern
TLV: Threshold Limit Values (Schwellwert Grenzwerte)
TRGS Technische Regeln für Gefahrstoffe
TSCA: Toxic Substances Control Act
TWA: Time Weighted Average (Zeitlich gewichteter Mittelwert) (8 h)
VOC: Volatile Organic Compounds
vPvB: very persistent and very bioaccumulative
VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe
WGK: Wassergefährdungsklasse

16.3. Key literature references and sources for data

No data available

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols (<i>Aerosol 1</i>)	H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated.	
Skin corrosion/irritation (<i>Skin Irrit. 2</i>)	H315: Causes skin irritation.	
Respiratory or skin sensitisation (<i>Skin Sens. 1B</i>)	H317: May cause an allergic skin reaction.	
STOT-single exposure (<i>STOT SE 3</i>)	H336: May cause drowsiness or dizziness.	

SAFETY DATA SHEET

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

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Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment (Aquatic Chronic 2)	H411: Toxic to aquatic life with long lasting effects.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

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.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
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