

SAFETY DATA SHEET

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

Revision date: 10 Mar 2022

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Version: 4



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Mabanol Engine Coolant Premium ++

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

* 1.1. Product identifier

Trade name/designation:

Mabanol Engine Coolant Premium ++

UFI:

4P5G-2P4R-5ECG-TR3D

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

Use of the substance/mixture:

Antifreeze agent

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

E-mail (competent person): giznord@giz-nord.de

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
Acute toxicity (oral) (<i>Acute Tox.</i> 4)	H302: Harmful if swallowed.	
STOT-repeated exposure (<i>STOT RE 2</i>)	H373: May cause damage to organs through prolonged or repeated exposure. (kidneys)	

* 2.2. Label elements

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

Hazard pictograms:



GHS07

Exclamation mark



GHS08

Health hazard

Signal word: Warning

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Hazard components for labelling:

2-ethylhexanoic acid; ethane-1,2-diol

Hazard statements for health hazards

H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure. (kidneys)

Precautionary statements

P102	Keep out of reach of children.
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Precautionary statements Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.

Precautionary statements Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.

Precautionary statements Disposal

P501	Dispose of contents/container to Dispose of waste according to applicable legislation..
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Additional information:

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

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.: 107-21-1 EC No.: 203-473-3 REACH No.: 01-2119456816-28	ethane-1,2-diol Acute Tox. 4 (H302), STOT RE 2 (H373) Warning	80 - 95 weight-%
CAS No.: 149-57-5 EC No.: 205-743-6 REACH No.: 01-2119488942-23	2-ethylhexanoic acid Repr. 2 (H361d***) Warning	< 3 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:

When in doubt or if symptoms are observed, get medical advice. Remove contaminated, saturated clothing. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:

Provide fresh air. Get medical advice/attention if you feel unwell.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing. In case of skin irritation, consult a physician.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

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Following ingestion:

Rinse mouth. Let water be drunk in little sips (dilution effect). Observe risk of aspiration if vomiting occurs. Get medical advice/attention if you feel unwell.

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

Following inhalation: May cause respiratory irritation. Symptoms: Cough. Dizziness. Nausea. Ingestion causes nausea, weakness and central nervous system effects.

May cause damage to kidneys through prolonged or repeated exposure if swallowed.

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

First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

* 5.1. Extinguishing media

Suitable extinguishing media:

alcohol resistant foam. Extinguishing powder. Carbon dioxide (CO₂). Sand.
In case of major fire and large quantities: Water mist. Water spray jet.

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.

5.3. Advice for firefighters

Do not inhale explosion and combustion gases. Wear a self-contained breathing apparatus and chemical protective clothing.

5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Treat the recovered material as prescribed in the section on waste disposal. Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

* 6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Use personal protection equipment. Use appropriate respiratory protection. Ventilate affected area. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

6.1.2. For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8.

* 6.2. Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers). Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Take up mechanically, placing in appropriate containers for disposal. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Personal protection equipment: see section 8

Disposal: see section 13

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Wear personal protection equipment (refer to section 8). Provide adequate ventilation.

Fire prevent measures:

Take precautionary measures against static discharges. 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. Wash hands before breaks and after work. Apply skin care products after work. Do not put any product-impregnated cleaning rags into your trouser pockets. Used working clothes should not be worn outside the work area. Wash contaminated clothing before reuse.

* 7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place. Only use containers specifically approved for the substance/product.

Requirements for storage rooms and vessels:

Keep only in the original container in a cool, well-ventilated place.

Hints on storage assembly:

Do not store together with: Oxidising agent, strong. Acids. Alkali metals.

Storage class (TRGS 510, Germany): 12 - non-combustible liquids that cannot be assigned to any of the above storage classes

Further information on storage conditions:

Temperature control required. Keep container tightly closed.

Protect against: Light. UV-radiation/sunlight. Air.

7.3. Specific end use(s)

No data available

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)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 10 ppm (26 mg/m ³) ② 20 ppm (52 mg/m ³) ⑤ (Aerosol und Dampf, kann über die Haut aufgenommen werden)
IOELV (EU)	ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	① 20 ppm (52 mg/m ³) ② 40 ppm (104 mg/m ³) ⑤ (may be absorbed through the skin)

8.1.2. Biological limit values

No data available

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8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	35 mg/m ³	① DNEL worker ② Long-term - inhalation, local effects
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	7 mg/m ³	① DNEL Consumer ② Acute - inhalation, local effects
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	106 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	53 mg/kg bw/ day	① DNEL Consumer ② Long-term - dermal, systemic effects

Substance name	PNEC Value	① PNEC type
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	10 mg/l	① PNEC aquatic, freshwater
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	1 mg/l	① PNEC aquatic, marine water
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	199.5 mg/l	① PNEC sewage treatment plant
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	37 mg/kg bw/ day	① PNEC sediment, freshwater
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	3.7 mg/kg bw/ day	① PNEC sediment, marine water
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	1.53 mg/kg bw/day	① PNEC soil

* 8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation.

8.2.2. Personal protection equipment



Eye/face protection:

Safety goggles with side protection. In case of increased risk add protective face shield. DIN EN 166.

Skin protection:

Tested protective gloves must be worn (EN ISO 374).

Suitable material: NBR (Nitrile rubber). CR (polychloroprene, chloroprene rubber).

Thickness of the glove material: > 0,4 mm. Breakthrough time: > 240 min.

Breakthrough times and swelling properties of the material must be taken into consideration. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable protective clothing: flame-resistant.

Respiratory protection:

Usually no personal respiratory protection necessary.

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Respiratory protection necessary at: exceeding exposure limit values. aerosol or mist formation. Suitable respiratory protection apparatus: Filtering device (full mask or mouthpiece) with filter: A2, A2/P2, ABEK. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

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: Liquid

Colour: clear

Odour: not determined

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	7 - 9		
Melting point	<i>not determined</i>		
Freezing point	<i>not determined</i>		
Initial boiling point and boiling range	163 - 185 °C		① ASTM D1120
Decomposition temperature	<i>not determined</i>		
Flash point	> 112 °C		① ASTM D92
Evaporation rate	<i>not determined</i>		
Auto-ignition temperature	<i>not determined</i>		
Upper/lower flammability or explosive limits	<i>not determined</i>		
Vapour pressure	<i>not determined</i>		
Vapour density	<i>not determined</i>		
Density	1.1 - 1.14 g/cm ³	20 °C	① ASTM D4052
Relative density	<i>not determined</i>		
Bulk density	<i>not determined</i>		
Water solubility	completely miscible		
Partition coefficient: n-octanol/water	<i>not determined</i>		
Dynamic viscosity	<i>not determined</i>		
Kinematic viscosity	<i>not determined</i>		

9.2. Other information

No data available

SECTION 10: Stability and reactivity

* 10.1. Reactivity

This material is considered to be non-reactive under normal use conditions.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

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

* 10.5. Incompatible materials

Oxidising agent, strong. Acids. Alkali metals.

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- * **10.6. Hazardous decomposition products**
aldehydes. Carbon dioxide (CO₂). Carbon monoxide.

SECTION 11: Toxicological information

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

Substance name	Toxicological information
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	LD₅₀ oral: 7,712 mg/kg (Rat) LD₅₀ dermal: >3,500 mg/kg (Mouse) LC₅₀ Acute inhalation toxicity (vapour): >2.5 mg/l 6 h (Rat)
2-ethylhexanoic acid CAS No.: 149-57-5 EC No.: 205-743-6	LD₅₀ oral: 3,640 mg/kg (Rat) LD₅₀ dermal: >2,000 mg/kg (Rabbit)

Acute oral toxicity:

Harmful if swallowed.

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:

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

Serious eye damage/irritation:

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

Respiratory or skin sensitisation:

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

Germ cell mutagenicity:

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

Carcinogenicity:

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

Reproductive toxicity:

Suspected of damaging the unborn child.

STOT-single exposure:

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

STOT-repeated exposure:

May cause damage to organs through prolonged or repeated exposure. (kidneys).

Aspiration hazard:

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

Additional information:

Frequently or prolonged contact with skin may cause dermal irritation.

- * **11.2. Information on other hazards**

Endocrine disrupting properties:

No information available.

SECTION 12: Ecological information

- * **12.1. Toxicity**

Substance name	Toxicological information
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	LC₅₀: 15,380 mg/l 4 d (fish) EC₅₀: 8,590 mg/l 2 d (crustaceans) ErC₅₀: ≥100 mg/l (Algae/water plant)

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Substance name	Toxicological information
2-ethylhexanoic acid CAS No.: 149-57-5 EC No.: 205-743-6	LC ₅₀ : 180 mg/l (fish, <i>Oryzias latipes</i> (Ricefish)) EC ₅₀ : 85.4 mg/l (crustaceans, <i>Daphnia magna</i> (Big water flea)) NOEC: 25 mg/l 21 d

* 12.2. Persistence and degradability

Substance name	Biodegradation	Remark
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	—	Readily biodegradable (according to OECD criteria).
2-ethylhexanoic acid CAS No.: 149-57-5 EC No.: 205-743-6	—	Readily biodegradable (according to OECD criteria).

Biodegradation:

Biodegradable. Data apply to the main component.

* 12.3. Bioaccumulative potential

Substance name	Log K _{ow}	Bioconcentration factor (BCF)
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	-1.36	
2-ethylhexanoic acid CAS No.: 149-57-5 EC No.: 205-743-6	2.7	

12.4. Mobility in soil

No information available.

* 12.5. Results of PBT and vPvB assessment

Substance name	Results of PBT and vPvB assessment
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
2-ethylhexanoic acid CAS No.: 149-57-5 EC No.: 205-743-6	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

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

* 12.6. Endocrine disrupting properties

No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product

16 01 14 *	antifreeze fluids containing hazardous substances
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*: Evidence for disposal must be provided.

Waste treatment options

Appropriate disposal / Product:

Consult the appropriate local waste disposal expert about waste disposal.

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Appropriate disposal / Package:

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

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN number or ID number			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es)			
not relevant	not relevant	not relevant	not relevant
14.4. Packing group			
not relevant	not relevant	not relevant	not relevant
14.5. Environmental hazards			
not relevant	not relevant	not relevant	not relevant
14.6. Special precautions for user			
not relevant	not relevant	not relevant	not relevant

14.7. Maritime transport in bulk according to IMO instruments

not relevant.

SECTION 15: Regulatory information

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

15.1.1. EU legislation

Restrictions on use:

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

Other regulations (EU):

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]: This product is not assigned to a hazard category.

Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive]: No information available.

Directive 2004/42/EC on the limitation of emissions of volatile organic compounds: No information available.

Observe in addition any national regulations!

15.1.2. National regulations

[DE] National regulations

Störfallverordnung

for substances contained in the product:

This product is not assigned to a hazard category.

Water hazard class

WGK:

1 - schwach wassergefährdend

Remark:

Self-classification (mixture; calculation rule).

* 15.2. Chemical Safety Assessment

For the following substances of this mixture a chemical safety assessment has been carried out: ethane-1,2-diol. 2-ethylhexanoic acid.

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SECTION 16: Other information

* 16.1. Indication of changes

1.1.	Product identifier
2.1.	Classification of the substance or mixture
2.2.	Label elements
3.2.	Mixtures
4.1.	Description of first aid measures
5.1.	Extinguishing media
6.1.	Personal precautions, protective equipment and emergency procedures
6.2.	Environmental precautions
7.2.	Conditions for safe storage, including any incompatibilities
8.1.	Control parameters
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
10.1.	Reactivity
10.5.	Incompatible materials
10.6.	Hazardous decomposition products
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
11.2.	Information on other hazards
12.1.	Toxicity
12.2.	Persistence and degradability
12.3.	Bioaccumulative potential
12.5.	Results of PBT and vPvB assessment
12.6.	Endocrine disrupting properties
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
15.2.	Chemical Safety Assessment
16.1.	Indication of changes
16.4.	Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

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

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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]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) (<i>Acute Tox. 4</i>)	H302: Harmful if swallowed.	
STOT-repeated exposure (<i>STOT RE 2</i>)	H373: May cause damage to organs through prolonged or repeated exposure. (kidneys)	

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

Hazard statements	
H302	Harmful if swallowed.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

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