

SAFETY DATA SHEET

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

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

1.1. Product identifier

Trade name/designation:

Mabanol Kühlerdichtmittel

Other means of identification:

Mabanol Radiator Sealant

UFI:

XRYY-P39G-X7FA-5KDS

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

Use of the substance/mixture:

Barrier (Sealant)

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
STOT-repeated exposure (STOT RE 2)	H373: May cause damage to organs through prolonged or repeated exposure. (...)	

2.2. Label elements

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

Hazard pictograms:



GHS08

Health hazard

Signal word: Warning

Hazard components for labelling:

morpholine; ethane-1,2-diol

hazard statements for health hazards

H373 May cause damage to organs through prolonged or repeated exposure. (...)

Precautionary statements Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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Precautionary statements Response

P314 Get medical advice/attention if you feel unwell.

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	ethane-1,2-diol Acute Tox. 4 (H302), STOT RE 2 (H373) Warning	10 - < 20 weight-%
CAS No.: 110-91-8 EC No.: 203-815-1	morpholine Acute Tox. 3 (H311, H331), Acute Tox. 4 (H302), Eye Dam. 1 (H318), Flam. Liq. 3 (H226), Skin Corr. 1B (H314) Danger	0 - < 1 weight-%

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:

In case of accident by inhalation: remove casualty to fresh air and keep at rest. 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. In case of skin irritation, consult a physician.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

Following ingestion:

Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Medical treatment necessary.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Full water jet.

5.2. Special hazards arising from the substance or mixture

No information available.

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* 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

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. 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:

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

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:

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. Clean contaminated articles and floor according to the environmental legislation.

* 6.4. Reference to other sections

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

* 7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Wear personal protection equipment (refer to section 8). Do not breathe gas/fumes/vapour/spray.

Fire prevent measures:

No special fire protection measures are necessary.

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. Keep locked up. Store in a place accessible by authorized persons only.

Provide adequate ventilation as well as local exhaust at critical locations.

Hints on storage assembly:

No special measures are necessary.

Storage class (TRGS 510, Germany): 10 - 13 - Other combustible and non-combustible substances

Further information on storage conditions:

Protect against: Frost.

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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)
TRGS 900 (DE)	morpholine CAS No.: 110-91-8 EC No.: 203-815-1	① 10 ppm (36 mg/m ³) ② 20 ppm (72 mg/m ³) ⑤ (kann über die Haut aufgenommen werden)
IOELV (EU)	morpholine CAS No.: 110-91-8 EC No.: 203-815-1	① 10 ppm (36 mg/m ³) ② 20 ppm (72 mg/m ³)
DFG (DE)	morpholine CAS No.: 110-91-8 EC No.: 203-815-1	① 5 ppm (18 mg/m ³) ② 5 ppm (18 mg/m ³) ③ 10 ppm (36 mg/m ³)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust/fume/gas/mist/vapours/spray.

8.2.2. Personal protection equipment

Eye/face protection:

Wear eye/face protection.

Skin protection:

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

Wear suitable protective clothing.

Respiratory protection:

In case of inadequate ventilation wear respiratory protection.

8.2.3. Environmental exposure controls

No data available

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SECTION 9: Physical and chemical properties

* 9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid

Colour: greenish blue

Odour: Lemon

Safety relevant basis data

parameter		at °C	Method	Remark
pH	9.5	20 °C	DIN 19268	
Melting point	<i>not determined</i>			
Freezing point	<i>not determined</i>			
Initial boiling point and boiling range	100 °C			
Decomposition temperature	<i>not determined</i>			
Flash point	111 °C			
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	1.02 g/cm ³	20 °C	DIN 51757	
Relative density	<i>not determined</i>			
Bulk density	<i>not determined</i>			
Water solubility	very soluble			
Partition coefficient: n-octanol/water	<i>not determined</i>			
Dynamic viscosity	<i>not determined</i>			
Kinematic viscosity	<i>not determined</i>	40 °C		

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

none.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

Further information

Do not mix with other chemicals.

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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: 1,600 mg/kg (Rat) LD₅₀ dermal: >3,500 mg/kg (Rabbit)
morpholine CAS No.: 110-91-8 EC No.: 203-815-1	LD₅₀ oral: 1,900 mg/kg (Rat) LD₅₀ dermal: 500 mg/kg (Rabbit) LC₅₀ Acute inhalation toxicity (vapour): 8 mg/l 4 h (Rat) LC₅₀ Acute inhalation toxicity (gas): 8,000 ppmV 4 h (Rat) ATE inhalativ Dämpfe: 0.5 mg/l

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:

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:

No indications of human germ cell mutagenicity exist.

Carcinogenicity:

No indication of human carcinogenicity.

Reproductive toxicity:

No indications of human reproductive toxicity exist.

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.

Aspiration hazard:

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

Additional information:

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

* 11.2. Information on other hazards

Endocrine disrupting properties:

No information available.

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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 : 72,860 mg/l 4 d (fish, Pimephales promelas (fath ead minnow)) ErC₅₀ : 6,500 - 13,000 mg/l 4 d (Algae/water plant, Sele nastrum capricornutum) EC₅₀ : >100 mg/l 2 d (crustaceans, Daphnia magna (Big water flea)) NOEC : 72,860 mg/l 4 d (fish, Pimephales promelas (fath ead minnow)) NOEC : 8,590 mg/l 4 d (crustaceans, Ceriodaphnia spec)
morpholine CAS No.: 110-91-8 EC No.: 203-815-1	LC₅₀ : 179 mg/l 4 d (fish, Oncorhynchus mykiss (Rainbow trout)) ErC₅₀ : 58 mg/l 3 d (Algae/water plant, Desmodesmus subspicatus) EC₅₀ : 45 mg/l 2 d (crustaceans, Daphnia magna (Big water flea)) NOEC : 10 mg/l 4 d (Algae/water plant, Desmodesmus subspicatus)

* 12.2. Persistence and degradability

Substance name	Biodegradation	Remark
morpholine CAS No.: 110-91-8 EC No.: 203-815-1	—	Readily biodegradable (according to OECD criteria).

* 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	
morpholine CAS No.: 110-91-8 EC No.: 203-815-1	-2.55	2.8

Accumulation / Evaluation:

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

* 12.5. Results of PBT and vPvB assessment

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.
morpholine CAS No.: 110-91-8 EC No.: 203-815-1	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

The product has not been tested.

* 12.6. Endocrine disrupting properties

No information available.

* 12.7. Other adverse effects

No information available.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

07 06 01 * aqueous washing liquids and mother liquors

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10 * packaging containing residues of or contaminated by dangerous substances

*: Evidence for disposal must be provided.

Waste treatment options

Appropriate disposal / Product:

This material and its container must be disposed of as hazardous waste.

Appropriate disposal / Package:

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

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

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			
14.4. Packing group			
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.
14.5. Environmental hazards			
not relevant			
14.6. Special precautions for user			
not relevant			

14.7. Maritime transport in bulk according to IMO instruments

not relevant

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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

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

Restrictions of occupation

To follow: §22 JArbSchG, §4 MuSchRiV, §5 MuSchRiV.

Störfallverordnung

for substances possibly developing during an incident:

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

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

* 16.1. Indication of changes

2.2.	Label elements
3.2.	Mixtures
4.1.	Description of first aid measures
5.3.	Advice for firefighters
5.4.	Additional information
6.2.	Environmental precautions
6.3.	Methods and material for containment and cleaning up
6.4.	Reference to other sections
7.1.	Precautions for safe handling
8.1.	Control parameters
9.1.	Information on basic physical and chemical properties
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
12.7.	Other adverse effects
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
15.3.	Additional information
16.1.	Indication of changes

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16.2. Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (International Carriage of Dangerous Goods by Road)

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

NOAEL: No observed adverse effect level

NOAEC: No observed adverse effect level

NTP: National Toxicology Program

N/A: not applicable

OSHA: Concerning the International Transport of Dangerous Goods by Rail)

PNEC: predicted no effect concentration

PBT: Persistent bioaccumulative toxic

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

SVHC: substance of very high concern

TRGS Technische Regeln für Gefahrstoffe

TSCA: Toxic Substances Control Act

VOC: Volatile Organic Compounds

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
STOT-repeated exposure (STOT RE 2)	H373: May cause damage to organs through prolonged or repeated exposure. (...)	

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

Hazard statements	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure. (...)

16.6. Training advice

No data available

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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