

SAFETY DATA SHEET

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

Revision date: 4 Jun 2024

Print date: 25 Jul 2024

Version: 1



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Mabanol Helium Hyd HFC 46

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

1.1. Product identifier

Trade name/designation:

Mabanol Helium Hyd HFC 46

UFI:

S77H-QNT4-QE6X-0F9N

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

Use of the substance/mixture:

Hydraulic fluids

1.3. Details of the supplier of the safety data sheet

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

Mabanol GmbH & Co. KG

Am Strandkai 1

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. 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.	

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:

2,2'-oxydiethanol; ethane-1,2-diol

Hazard statements for health hazards

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

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

Description:

Mixture of substances listed below and other non-classified substances.

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 111-46-6 EC No.: 203-872-2	2,2'-oxydiethanol Acute Tox. 4 (H302), STOT RE 2 (H373) Warning Acute Toxicity Estimate ATE (oral) 500 mg/kg	20 - < 60 weight-%
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 Acute Toxicity Estimate ATE (oral) > 2,000 mg/kg ATE (dermal) > 3,500 mg/kg ATE (inhalation, vapour) > 2.5 mg/L	2.5 - < 10 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:

Remove casualty to fresh air and keep warm and 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 and wash it before reuse. In case of skin irritation, consult a physician.

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After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Following ingestion:

Rinse mouth thoroughly with water. Do NOT induce vomiting. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Never give anything by mouth to an unconscious person or a person with cramps.

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

Observe risk of aspiration if vomiting occurs.

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:

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

Unsuitable extinguishing media:

Full water jet.

5.2. Special hazards arising from the substance or mixture

Burning produces heavy smoke.

Hazardous combustion products:

In case of fire: Gases/vapours, toxic. In case of fire may be liberated: Nitrogen oxides (NO_x). Carbon monoxide. Carbon dioxide (CO₂). Sulphur dioxide (SO₂).

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. 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. Ventilate affected area. Special danger of slipping by leaking/spilling product.

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). Do not allow to enter into soil/subsoil.

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

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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). Avoid: Generation/formation of mist. generation/formation of aerosols.

Fire prevent measures:

Usual measures for fire prevention. 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.

Hints on storage assembly:

Do not store together with: Oxidizing agent. Food and feedingstuffs.

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)	2,2'-oxydiethanol CAS No.: 111-46-6 EC No.: 203-872-2	① 10 ppm (44 mg/m ³) ② 40 ppm (176 mg/m ³) ⑤ (Aerosol und Dampf) DFG, Y, 11
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) DFG, EU, H, Y, 11
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/kg bw/ day	① DNEL worker ② Long-term - inhalation, systemic effects
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	7 mg/kg	① DNEL Consumer ② Long-term - 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	20.9 mg/kg	① PNEC sediment, freshwater
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	10 mg/L	① PNEC aquatic, intermittent release
ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3	1.53 mg/kg	① PNEC soil, freshwater

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation.

8.2.2. Personal protection equipment



Eye/face protection:

Eye glasses with side protection (EN 166).

Skin protection:

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

Suitable material: NBR (Nitrile rubber).

Thickness of the glove material $\geq 0,38\text{mm}$. Breakthrough time: $>480\text{ min}$.

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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If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Respiratory protection necessary at: exceeding exposure limit values. insufficient ventilation. aerosol or mist formation. Suitable respiratory protection apparatus: Combination filtering device.

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: green

Odour: not determined

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	9.3 - 9.8		
Melting point	No data available		
Freezing point	No data available		
Initial boiling point and boiling range	100 °C		
Flash point	not applicable		
Evaporation rate	No data available		
Auto-ignition temperature	No data available		
Upper/lower flammability or explosive limits	No data available		
Vapour pressure	No data available		
Vapour density	No data available		
Density	1.1 g/cm ³	20 °C	
Bulk density	not applicable		
Water solubility	completely miscible		
Dynamic viscosity	No data available		
Kinematic viscosity	41.4 - 50.6 mm ² /s	40 °C	
Pour point	< -20 °C		

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 stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Heat. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

10.5. Incompatible materials

Oxidising agent, strong. Reducing agent. Strong acids.

10.6. Hazardous decomposition products

In case of fire may be liberated: Nitrogen oxides (NO_x). Carbon monoxide. Carbon dioxide (CO₂). Sulphur dioxide (SO₂).

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SECTION 11: Toxicological information

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

ethane-1,2-diol CAS No.: 107-21-1 EC No.: 203-473-3
LD₅₀ oral: >2,000 mg/kg (Rat)
LD₅₀ dermal: >3,500 mg/kg (Rabbit)
LC₅₀ Acute inhalation toxicity (vapour): >2.5 mg/L 6 h (Rat)

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:

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

STOT-single exposure:

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

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.

11.2. Information on other hazards

Endocrine disrupting properties:

None.

SECTION 12: Ecological information

12.1. Toxicity

Assessment/classification:

No information available.

Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment. Do not allow to enter into surface water or drains.

12.2. Persistence and degradability

Biodegradation:

Biodegradable.

12.3. Bioaccumulative potential

Accumulation / Evaluation:

No information available.

12.4. Mobility in soil

No information available.

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12.5. Results of PBT and vPvB assessment

not applicable.

12.6. Endocrine disrupting properties

none.

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

13 01 12 *	readily biodegradable hydraulic oils
13 01 13 *	other hydraulic oils

*: Evidence for disposal must be provided.

Waste treatment options

Appropriate disposal / Product:

Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

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

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.

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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.: 3.

Other regulations (EU):

This product is not assigned to a hazard category.

This product is not classified according to Directive 2012/18/EU.

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 (12. BImSchV)

for substances contained in the product:

This product is not assigned to a hazard category.

Water hazard class

WGK:

1 - slightly hazardous to water

Remark:

Self-classification (mixture; calculation rule).

15.2. Chemical Safety Assessment

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

15.3. Additional information

Water hazard class (WGK): 1 (slightly hazardous to water).

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
DIN	German Institute for Standardization / German Industrial Standard
DNEL	derived no-effect level
EN	European Standard
ES	Exposure scenario
EWC	European Waste Catalogue
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
KG	body weight
LC ₅₀	Lethal (fatal) Concentration 50%
LD ₅₀	Lethal (fatal) Dose 50%
MAK	Maximum concentration in the workplace air (CH)
NFPA	National Fire Protection Association
PBT	persistent and bioaccumulative and toxic
PNEC	Predicted No Effect Concentration

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REACH Registration, Evaluation and Authorization of Chemicals
RID Dangerous goods regulations for transport by rail
TRGS Technische Regeln für Gefahrstoffe
UN United Nations

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.	

16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15

Hazard statements	
H302	Harmful if swallowed.
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.