Mabanol Helium Hyd HLP 22 ZF

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

1.1. Product identifier
Trade name/designation:

Mabanol Helium Hyd HLP 22 ZF

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
Hazardous to the aquatic environment *(Aquatic Chronic 3)*	H412: Harmful to aquatic life with long lasting effects.	

*
2.2. Label elements

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

Hazard components for labelling:
Distillates (petroleum), solvent-dewaxed light paraffinic

Hazard statements for environmental hazards	
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements Prevention	
P273	Avoid release to the environment.

Precautionary statements Disposal	
P501	Dispose of contents/container to Dispose of waste according to applicable legislation..

Additional information:
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII. This mixture contains no substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH.

2.3. Other hazards
No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Additional information:

The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346 'Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions — Dimethyl sulphoxide extraction refractive index method', Institute of Petroleum, London. This note applies only to certain complex oil-derived substances in Part 3.

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 64742-56-9 EC No.: 265-159-2 REACH No.: 01-2119480132-48	**Distillates (petroleum), solvent-dewaxed light paraffinic** Asp. Tox. 1 (H304) Danger **Acute Toxicity Estimate** ATE (oral) > 5,000 mg/kg ATE (dermal) > 5,000 mg/kg ATE (inhalation, dust/mist) > 5.53 mg/L	80 – < 85 weight-%
CAS No.: 128-39-2 EC No.: 204-884-0 REACH No.: 01-2119490822-33	**2,6-di-tert-butylphenol** Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Skin Irrit. 2 (H315) Warning **Acute Toxicity Estimate** ATE (oral) > 5,000 mg/kg ATE (dermal) > 2,000 mg/kg	0.2 – < 0.3 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:

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. 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:

Do NOT induce vomiting. Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Never give anything by mouth to an unconscious person or a person with cramps. When in doubt or if symptoms are observed, get medical advice.

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 (NOx). 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. Do not allow to enter into soil/subsoil. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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
No information available.

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 contact with skin, eyes and clothes. Avoid: Generation/formation of mist. generation/formation of aerosols. Do not breathe gas/fumes/vapour/spray.

Fire prevent measures:
Usual measures for fire prevention. Keep away from sources of ignition - No smoking.
Fire class: B (Fires of liquids or liquid turning substances).

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: Gas. Explosives. P8 OXIDISING LIQUIDS AND SOLIDS. Radioactive substances. Infectious substances.

Storage class (TRGS 510, Germany): 10 – 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

No data available

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
Distillates (petroleum), solvent-dewaxed light paraffinic CAS No.: 64742-56-9 EC No.: 265-159-2	2.73 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
Distillates (petroleum), solvent-dewaxed light paraffinic CAS No.: 64742-56-9 EC No.: 265-159-2	5.58 mg/m³	① DNEL worker ② Long-term – inhalation, local effects
Distillates (petroleum), solvent-dewaxed light paraffinic CAS No.: 64742-56-9 EC No.: 265-159-2	1.19 mg/m³	① DNEL Consumer ② Long-term – inhalation, local effects
Distillates (petroleum), solvent-dewaxed light paraffinic CAS No.: 64742-56-9 EC No.: 265-159-2	0.97 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
Distillates (petroleum), solvent-dewaxed light paraffinic CAS No.: 64742-56-9 EC No.: 265-159-2	0.74 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	70.61 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	20.9 mg/m³	① DNEL Consumer ② Long-term – inhalation, systemic effects
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	11.25 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	6.75 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects

Substance name	DNEL value	① DNEL type ② Exposure route
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	6.75 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects

Substance name	PNEC Value	① PNEC type
Distillates (petroleum), solvent-dewaxed light paraffinic CAS No.: 64742-56-9 EC No.: 265-159-2	9.33 mg/kg	① PNEC secondary poisoning
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	0.001 mg/L	① PNEC aquatic, freshwater
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	0.0001 mg/L	① PNEC aquatic, marine water
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	10 mg/kg	① PNEC sewage treatment plant
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	0.317 mg/kg	① PNEC sediment, freshwater
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	0.0317 mg/kg	① PNEC sediment, marine water
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	0.679 mg/kg	① PNEC soil
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0	60 mg/kg	① PNEC secondary poisoning

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). FKM (fluoro rubber).
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 respirative protection necessary.
Respiratory protection necessary at: exceeding exposure limit values. aerosol or mist formation. Suitable respiratory protection apparatus: aerosol or mist formation: 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 information available.

*

8.3. Additional information

Air limit values:
Possibility of exposure to Aerosol (Mineral oil)
Limit value (TLV-TWA) = 5 mg/ m3 - Source: ACGIH
Limit value (TLV-STEL) = 10 mg/ m3 - Source: ACGIH

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid
Colour: not determined
Odour: not determined
flammability: No data available

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	*No data available*		
Melting point	*No data available*		
Freezing point	*No data available*		
Initial boiling point and boiling range	*No data available*		
Flash point	200 °C		① EN ISO 2592
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	0.867 g/cm³	15 °C	① DIN 51757
Bulk density	*not applicable*		
Water solubility	*No data available*		
Dynamic viscosity	*No data available*		
Kinematic viscosity	22.1 mm²/s	40 °C	① EN ISO 3104
Pour point	-30 °C		① ASTM D 5985

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

No known hazardous reactions.

10.4. Conditions to avoid

No information available.

10.5. Incompatible materials
Oxidising agent, strong.

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

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

Toxicological information

Acute Toxicity Estimate for Mixtures
ATE (oral): >2,000 mg/kg
ATE (dermal): >2,000 mg/kg
ATE (inhalation, vapour): >20 mg/L
ATE (inhalation, dust/mist): >5 mg/L
Distillates (petroleum), solvent-dewaxed light paraffinic CAS No.: 64742-56-9 EC No.: 265-159-2
LD_{50} oral: >5,000 mg/kg (Rat)
LD_{50} dermal: >5,000 mg/kg (Rabbit)
LC_{50} Acute inhalation toxicity (dust/mist): >5.53 mg/L 4 h (Rat)
2,6-di-tert-butylphenol CAS No.: 128-39-2 EC No.: 204-884-0
LD_{50} oral: >5,000 mg/kg (Rat) OECD 401
LD_{50} dermal: >2,000 mg/kg (Rat)

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:
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:
This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

SECTION 12: Ecological information

12.1. Toxicity

Distillates (petroleum), solvent-dewaxed light paraffinic	CAS No.: 64742-56-9 EC No.: 265-159-2
LC_{50}: >100 mg/L 4 d (fish, Pimephales promelas (fathead minnow))	
EC_{50}: >10,000 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))	
NOEC: 10 mg/L 21 d (crustaceans, Daphnia magna (Big water flea))	
ErC_{50}: >100 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata)	
2,6-di-tert-butylphenol	CAS No.: 128-39-2 EC No.: 204-884-0
LC_{50}: 1.4 mg/L 4 d (fish, Pimephales promelas (fathead minnow))	
EC_{50}: 0.45 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))	
NOEC: 0.023 mg/L 21 d (crustaceans, Daphnia magna (Big water flea))	
ErC_{50}: 1.4 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata)	

Aquatic toxicity:
Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

Distillates (petroleum), solvent-dewaxed light paraffinic	CAS No.: 64742-56-9 EC No.: 265-159-2
Biodegradation: —	
Remark: Not readily biodegradable (according to OECD criteria)	
2,6-di-tert-butylphenol	CAS No.: 128-39-2 EC No.: 204-884-0
Biodegradation: —	
Remark: Not readily biodegradable (according to OECD criteria)	

Abiotic degradation:
The product is slightly soluble in water. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

* 12.3. Bioaccumulative potential

Distillates (petroleum), solvent-dewaxed light paraffinic	CAS No.: 64742-56-9 EC No.: 265-159-2
Log K_{OW}: > 3.5	
2,6-di-tert-butylphenol	CAS No.: 128-39-2 EC No.: 204-884-0
Log K_{OW}: 4.5	

Accumulation / Evaluation:
No indication of bioaccumulation potential.

12.4. Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Distillates (petroleum), solvent-dewaxed light paraffinic	CAS No.: 64742-56-9 EC No.: 265-159-2
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.	
2,6-di-tert-butylphenol	CAS No.: 128-39-2 EC No.: 204-884-0
Results of PBT and vPvB assessment: 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.
The above statement applies to the substances contained in the product from 0.1%.

* 12.6. Endocrine disrupting properties
Based on available data, the classification criteria are not met.
The above statement applies to the substances contained in the product from 0.1%.

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

* **13.1. Waste treatment methods**

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal. 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 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:

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.	UN 9006	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.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	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	9	not relevant	not relevant
* **14.4. Packing group**			
not relevant		not relevant	not relevant
* **14.5. Environmental hazards**			
not relevant	No	not relevant	not relevant
* **14.6. Special precautions for user**			
not relevant	**Classification code:** M11	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. 75.

Synthetic polymer microparticles (as per entry 78 in Annex XVII of Regulation (EC) No. 1907/2006)

No synthetic microparticles are present.

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.
Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]: Not subject to the SEVESO III directive.
Observe in addition any national regulations!

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

To follow: § 22 Observe employment restrictions according to the Law for the protection of working youth (Protection of Young Persons Act - JArbSchG).

Störfallverordnung (12. BImschV)

for substances contained in the product:

This product is not assigned to a hazard category.

Technische Anleitung zur Reinhaltung der Luft (TA-Luft)

Klasse 1:

5.2.5: organic substances, to be indicated as total carbon at m >= 0.50 kg/h: conc. 50 mg/m³.

Anteil 1:

100 %

Water hazard class

WGK:

1 - slightly hazardous to water

Remark:

Self-classification (mixture; calculation rule).

15.2. Chemical Safety Assessment

not applicable.

15.3. Additional information

Regulation (EU) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals: not relevant.
Water hazard class (WGK): 1 (slightly hazardous to water).

SECTION 16: Other information

*

16.1. Indication of changes

1.3.	Details of the supplier of the safety data sheet
1.4.	Emergency telephone number
2.2.	Label elements
8.3.	Additional information
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
12.3.	Bioaccumulative potential
12.6.	Endocrine disrupting properties
13.1.	Waste treatment methods
14.1.	UN number or ID number
14.2.	UN proper shipping name
14.3.	Transport hazard class(es)
14.4.	Packing group
14.5.	Environmental hazards
14.6.	Special precautions for user
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes

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
LC_{50}: Lethal concentration, 50 percent
LD_{50}: 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 imit (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]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment *(Aquatic Chronic 3)*	H412: Harmful to aquatic life with long lasting effects.	

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

Hazard statements	
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.

Hazard statements	
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

16.6. Training advice
No data available

16.7. Additional information
Classification according to Regulation (EC) No 1272/2008 [CLP] - Classification procedure:
health hazards: Calculation method.
Environmental hazards: Calculation method.
Physical hazards: On basis of test data.

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.