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Revision date / version: 12.05.2022 / 0016  
Replacing version dated / version: 01.11.2021 / 0015  
Valid from: 12.05.2022  
PDF print date: 13.05.2022  
Marine Getriebeoel GL4/GL5 80W-90

## Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

#### 1.1 Product identifier

#### Marine Getriebeoel GL4/GL5 80W-90

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

##### Relevant identified uses of the substance or mixture:

Gear lubricant

##### Uses advised against:

No information available at present.

#### 1.3 Details of the supplier of the safety data sheet

LIQUI MOLY GmbH  
Jerg-Wieland-Str. 4  
89081 Ulm-Lehr  
Tel.: (+49) 0731-1420-0  
Fax: (+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

#### 1.4 Emergency telephone number

##### Emergency information services / official advisory body:

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##### Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)  
+1 872 5888271 (LMR)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) 1272/2008 (CLP)

The mixture is not classified as dangerous in the terms of the Regulation (EC) 1272/2008 (CLP).

#### 2.2 Label elements

##### Labeling according to Regulation (EC) 1272/2008 (CLP)

EUH208-Contains Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched). May produce an allergic reaction.  
EUH210-Safety data sheet available on request.

#### 2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).  
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).  
The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).  
Product can compose a film on the water surface, which can prevent oxygen exchange.  
Endangerment of potable water possible.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

n.a.

### 3.2 Mixtures

Polysulfides, di-tert-Bu	
Registration number (REACH)	01-2119540515-43-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	273-103-3
CAS	68937-96-2
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Skin Sens. 1B, H317 Aquatic Chronic 3, H412
Specific Concentration Limits and ATE	Skin Sens. 1B, H317: >=46 %

Baseoil - unspecified *	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	---
content %	0,1-2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Asp. Tox. 1, H304

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)	
Registration number (REACH)	01-2119493620-38-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	931-384-6
CAS	---
content %	0,1-<2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 2, H411
Specific Concentration Limits and ATE	Eye Dam. 1, H318: >50 % Eye Irrit. 2, H319: >50 % Skin Sens. 1B, H317: >=9,39 %

O,O,O-triphenyl phosphorothioate	
Registration number (REACH)	01-2119979545-21-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	209-909-9
CAS	597-82-0
content %	0,1-<1
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Repr. 2, H361fd (oral)
Specific Concentration Limits and ATE	Repr. 2, H361fd ( oral): >4,1 %

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

\* The contained mineral oil can be described by one or more of the following numbers:

EINECS, ELINCS, NLP, REACH-IT List-No.	Registration number (REACH)	Chemical name
265-157-1	01-2119484627-25-XXXX	Distillates (petroleum), hydrotreated heavy paraffinic
265-169-7	01-2119471299-27-XXXX	Distillates (petroleum), solvent-dewaxed heavy paraffinic
265-158-7	01-2119487077-29-XXXX	Distillates (petroleum), hydrotreated light paraffinic
265-159-2	01-2119480132-48-XXXX	Distillates (petroleum), solvent-dewaxed light paraffinic

The substances named in this section are given with their actual, appropriate classification!

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For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

First-aiders should ensure they are protected!  
Never pour anything into the mouth of an unconscious person!

#### Inhalation

Remove person from danger area.  
Supply person with fresh air and consult doctor according to symptoms.

#### Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

#### Eye contact

Remove contact lenses.  
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.  
Keep Data Sheet available.

#### Ingestion

Rinse the mouth thoroughly with water.  
Do not induce vomiting. Consult doctor immediately.

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

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

The following may occur:

Irritation of the eyes  
Drying of the skin.  
Dermatitis (skin inflammation)  
Irritation of the skin.

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

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

n.c.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

CO2  
Foam  
Dry extinguisher  
Water jet spray

#### Unsuitable extinguishing media

High volume water jet

### 5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon  
Oxides of nitrogen  
Oxides of sulphur  
Flammable vapour/air mixtures

### 5.3 Advice for firefighters

For personal protective equipment see Section 8.  
In case of fire and/or explosion do not breathe fumes.  
Protective respirator with independent air supply.  
According to size of fire  
Full protection, if necessary.  
Cool container at risk with water.  
Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

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## 6.1 Personal precautions, protective equipment and emergency procedures

### 6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.  
 Ensure sufficient ventilation, remove sources of ignition.  
 Avoid dust formation with solid or powder products.  
 Leave the danger zone if possible, use existing emergency plans if necessary.  
 Ensure sufficient supply of air.  
 Avoid contact with eyes or skin.  
 If applicable, caution - risk of slipping.

### 6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

## 6.2 Environmental precautions

If leakage occurs, dam up.  
 Resolve leaks if this possible without risk.  
 Prevent from entering drainage system.  
 Prevent surface and ground-water infiltration, as well as ground penetration.  
 If accidental entry into drainage system occurs, inform responsible authorities.

## 6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13.  
Oil binder

## 6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

## SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

### 7.1 Precautions for safe handling

#### 7.1.1 General recommendations

Avoid formation of oil mist.  
 Ensure good ventilation.  
 Do not heat to temperatures close to flash point.  
 Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.  
 Avoid long lasting or intensive contact with skin.  
 Do not carry cleaning cloths soaked in product in trouser pockets.  
 Observe directions on label and instructions for use.

#### 7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.  
 Wash hands before breaks and at end of work.  
 Keep away from food, drink and animal feedingstuffs.  
 Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

### 7.2 Conditions for safe storage, including any incompatibilities

Not to be stored in gangways or stair wells.  
 Store product closed and only in original packing.  
 Protect against moisture and store closed.

### 7.3 Specific end use(s)

No information available at present.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

GB	Chemical Name	Oil mist, mineral	
	WEL-TWA: 5 mg/m <sup>3</sup> (Mineral oil, excluding metal working fluids, ACGIH)	WEL-STEL: ---	---
	Monitoring procedures:	- Draeger - Oil Mist 1/a (67 33 031)	
	BMGV: ---	Other information: ---	

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Baseoil - unspecified						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - oral (animal feed)		PNEC	9,33	mg/kg	
Consumer	Human - inhalation	Long term, local effects	DNEL	1,2	mg/m <sup>3</sup>	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,74	mg/kg	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	1	mg/kg	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	5,6	mg/m <sup>3</sup>	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	2,7	mg/m <sup>3</sup>	

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,001	mg/l	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	2,2	mg/l	
Consumer	Human - dermal	Long term, systemic effects	DNEL	6,25	mg/kg bw/day	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,25	mg/kg bw/day	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	12,5	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	8,56	mg/m <sup>3</sup>	

O,O,O-triphenyl phosphorothioate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - soil		PNEC	2,37	mg/kg	
	Environment - sewage treatment plant		PNEC	10	mg/l	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,2	mg/kg body weight/day	
Consumer	Human - dermal	Long term, systemic effects	DNEL	0,2	mg/kg body weight/day	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,34	mg/m <sup>3</sup>	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	0,4	mg/kg body weight/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	1,39	mg/m <sup>3</sup>	

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).  
 (8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE).  
 (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).  
 (8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit

value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.

\*\* = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

## 8.2 Exposure controls

### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. EN 14042.

EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

### 8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:

Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:

Chemical resistant protective gloves (EN ISO 374).

If applicable

Protective nitrile gloves (EN ISO 374).

Minimum layer thickness in mm:

0,35

Permeation time (penetration time) in minutes:

>= 480

Protective hand cream recommended.

The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.

The recommended maximum wearing time is 50% of breakthrough time.

Skin protection - Other:

Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:

If OES or MEL is exceeded.

Filter A2 P2 (EN 14387), code colour brown, white

Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:

Not applicable

Additional information on hand protection - No tests have been performed.

In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.

Selection of materials derived from glove manufacturer's indications.

Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.

Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.

In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.

The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

### 8.2.3 Environmental exposure controls

No information available at present.

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## 9.1 Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Yellow, Brown
Odour:	Characteristic
Melting point/freezing point:	There is no information available on this parameter.
Boiling point or initial boiling point and boiling range:	There is no information available on this parameter.
Flammability:	Flammable
Lower explosion limit:	There is no information available on this parameter.
Upper explosion limit:	There is no information available on this parameter.
Flash point:	200 °C
Auto-ignition temperature:	There is no information available on this parameter.
Decomposition temperature:	There is no information available on this parameter.
pH:	Mixture is non-soluble (in water).
Kinematic viscosity:	14,5 mm <sup>2</sup> /s (100°C)
Kinematic viscosity:	142 mm <sup>2</sup> /s (40°C)
Solubility:	Insoluble
Partition coefficient n-octanol/water (log value):	Does not apply to mixtures.
Vapour pressure:	There is no information available on this parameter.
Density and/or relative density:	0,9 g/ml
Relative vapour density:	There is no information available on this parameter.
Particle characteristics:	Does not apply to liquids.

## 9.2 Other information

Explosives:	There is no information available on this parameter.
Oxidising liquids:	There is no information available on this parameter.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product has not been tested.

### 10.2 Chemical stability

Stable with proper storage and handling.

### 10.3 Possibility of hazardous reactions

No decomposition if used as intended.

### 10.4 Conditions to avoid

See also section 7.

Protect from humidity.

Open flame, ignition sources

### 10.5 Incompatible materials

See also section 7.

Avoid contact with strong oxidizing agents.

### 10.6 Hazardous decomposition products

See also section 5.2

No decomposition when used as directed.

## SECTION 11: Toxicological information

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

Possibly more information on health effects, see Section 2.1 (classification).

#### Marine Getriebeoel GL4/GL5 80W-90

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.

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Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

**Polysulfides, di-tert-Bu**

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Skin Sens. 1B

**Baseoil - unspecified**

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Respiratory or skin sensitisation:						Not sensitising, Analogous conclusion
Aspiration hazard:						Yes
Symptoms:						mucous membrane irritation

**Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)**

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	2000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	Analogous conclusion
Acute toxicity, by oral route:	LD50	> 3000	mg/kg	Rat	OECD 420 (Acute Oral toxicity - Fixe Dose Procedure)	
Acute toxicity, by dermal route:	LD50	5000	mg/kg	Rabbit	OECD 434 (Acute Dermal Toxicity – Fixed Dose Procedure)	
Acute toxicity, by inhalation:	LD50	> 22	mg/l/1h	Rat		VapoursOECD 433
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Corrosive
Serious eye damage/irritation:		>=50	%	Rabbit		Eye Dam. 1, Classification based on toxicological analyses.
Serious eye damage/irritation:		<50	%	Rabbit		Not irritant, Classification based on toxicological analyses.
Respiratory or skin sensitisation:				Mouse	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Yes (skin contact), Analogous conclusion
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative, Analogous conclusion
Germ cell mutagenicity:				Mouse	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative, Analogous conclusion



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Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	150	mg/kg bw/d	Rat	OECD 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)	
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<b>O,O,O-triphenyl phosphorothioate</b>						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	> 2000	mg/kg	Rat		
Skin corrosion/irritation:				Rabbit		Not irritant
Serious eye damage/irritation:				Rabbit		Not irritant
Respiratory or skin sensitisation:				Guinea pig	Regulation (EC) 440/2008 B.6 (SKIN SENSITISATION)	No (skin contact)
Germ cell mutagenicity:					OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative Chinese hamster
Germ cell mutagenicity:				Human being	OECD 487 (In Vitro Mammalian Cell Micronucleus Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Reproductive toxicity (Effects on fertility):						Positive, Analogous conclusion oral
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAEL	25	mg/kg/d	Rat		Target organ(s): liver, kidneys

## 11.2. Information on other hazards

<b>Marine Getriebeoel GL4/GL5 80W-90</b>						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Endocrine disrupting properties:						Does not apply to mixtures.
Other information:						No other relevant information available on adverse effects on health.

## SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

<b>Marine Getriebeoel GL4/GL5 80W-90</b>							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Endocrine disrupting properties:							Does not apply to mixtures.
12.7. Other adverse effects:							No information available on other adverse effects on the environment.

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Polysulfides, di-tert-Bu							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.3. Bioaccumulative potential:	Log Kow		6				measured
12.1. Toxicity to daphnia:	EC50	48h	63	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.2. Persistence and degradability:		28d	13	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Not readily biodegradable
12.1. Toxicity to algae:	EC50	72h	>100	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
Toxicity to bacteria:	EC50	3h	>10000	mg/l	activated sludge		

Baseoil - unspecified							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Pimephales promelas		
12.1. Toxicity to daphnia:	EC50	48h	>10000	mg/l	Daphnia magna		
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	>10	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	72h	>100	mg/l	Scenedesmus quadricauda		
12.2. Persistence and degradability:		28d	31	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Not readily biodegradable

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	NOEC/NOEL	96h	3,2	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to fish:	LC50	96h	8,5	mg/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EL50	21d	0,66	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	0,12	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	Analogous conclusion
12.1. Toxicity to daphnia:	EL50	48h	91,4	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	Analogous conclusion
12.1. Toxicity to algae:	EC50	96h	6,4	mg/l	Selenastrum capricornutum	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	NOEC/NOEL	96h	1,7	mg/l	Selenastrum capricornutum	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	7,4	%	activated sludge	OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Not readily biodegradable

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12.2. Persistence and degradability:	DOC	28d	3,6	%	activated sludge		Not readily biodegradable
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC50	3h	~2433	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

#### O,O,O-triphenyl phosphorothioate

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	Water toxicology is above the water-solubility value.
12.1. Toxicity to daphnia:	EC50	48h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	Water toxicology is above the water-solubility value.
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	>5,5	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	Water toxicology is above the water-solubility value.
12.1. Toxicity to algae:	EC50	72h	>100	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	17,8-19,3		activated sludge	OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Not readily biodegradable
12.2. Persistence and degradability:	DOC	28d	59,9-66,8	%	activated sludge	OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))	
12.3. Bioaccumulative potential:	BCF		2551				
12.3. Bioaccumulative potential:	Log Pow		5,1				Concentration in organisms possible.
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	IC50	3h	>100	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### For the substance / mixture / residual amounts

Soaked polluted cloths, paper or other organic materials represent a fire hazard and should be controlled, collected and disposed of.

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EC disposal code no.:  
 The waste codes are recommendations based on the scheduled use of this product.  
 Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)  
 13 02 05 mineral-based non-chlorinated engine, gear and lubricating oils  
 Recommendation:  
 Sewage disposal shall be discouraged.  
 Pay attention to local and national official regulations.  
 E.g. dispose at suitable refuse site.  
 E.g. suitable incineration plant.

### For contaminated packing material

Pay attention to local and national official regulations.  
 15 01 01 paper and cardboard packaging  
 15 01 02 plastic packaging  
 15 01 04 metallic packaging  
 Empty container completely.  
 Uncontaminated packaging can be recycled.  
 Dispose of packaging that cannot be cleaned in the same manner as the substance.

## SECTION 14: Transport information

### General statements

14.1. UN number or ID number: n.a.

### Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:  
 14.3. Transport hazard class(es): n.a.  
 14.4. Packing group: n.a.  
 Classification code: n.a.  
 LQ: n.a.  
 14.5. Environmental hazards: Not applicable  
 Tunnel restriction code:

### Transport by sea (IMDG-code)

14.2. UN proper shipping name:  
 14.3. Transport hazard class(es): n.a.  
 14.4. Packing group: n.a.  
 Marine Pollutant: n.a.  
 14.5. Environmental hazards: Not applicable

### Transport by air (IATA)

14.2. UN proper shipping name:  
 14.3. Transport hazard class(es): n.a.  
 14.4. Packing group: n.a.  
 14.5. Environmental hazards: Not applicable

### 14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

### 14.7. Maritime transport in bulk according to IMO instruments

Non-dangerous material according to Transport Regulations.

## SECTION 15: Regulatory information

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

Observe restrictions:  
 General hygiene measures for the handling of chemicals are applicable.

Directive 2010/75/EU (VOC): ~ 4 %

### 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

## SECTION 16: Other information

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Revised sections:

8

### Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Not applicable

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H317 May cause an allergic skin reaction.  
 H361fd Suspected of damaging fertility and the unborn child if swallowed.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H318 Causes serious eye damage.  
 H411 Toxic to aquatic life with long lasting effects.  
 H412 Harmful to aquatic life with long lasting effects.

Skin Sens. — Skin sensitization  
 Aquatic Chronic — Hazardous to the aquatic environment - chronic  
 Asp. Tox. — Aspiration hazard  
 Acute Tox. — Acute toxicity - oral  
 Eye Dam. — Serious eye damage  
 Repr. — Reproductive toxicity

### Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.  
 Guidelines for the preparation of safety data sheets as amended (ECHA).  
 Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).  
 Safety data sheets for the constituent substances.  
 ECHA Homepage - Information about chemicals.  
 GESTIS Substance Database (Germany).  
 German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).  
 EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.  
 National Lists of Occupational Exposure Limits for each country as amended.  
 Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

### Any abbreviations and acronyms used in this document:

acc., acc. to according, according to  
 ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 AOX Adsorbable organic halogen compounds  
 approx. approximately  
 Art., Art. no. Article number  
 ASTM ASTM International (American Society for Testing and Materials)  
 ATE Acute Toxicity Estimate  
 BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)  
 BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)  
 BCF Bioconcentration factor  
 BSEF The International Bromine Council  
 bw body weight  
 CAS Chemical Abstracts Service  
 CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)  
 CMR carcinogenic, mutagenic, reproductive toxic  
 DMEL Derived Minimum Effect Level  
 DNEL Derived No Effect Level  
 DOC Dissolved organic carbon  
 dw dry weight

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e.g. for example (abbreviation of Latin 'exempli gratia'), for instance  
 EbCx, EyCx, EBLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)  
 EC European Community  
 ECHA European Chemicals Agency  
 ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect  
 EEC European Economic Community  
 EINECS European Inventory of Existing Commercial Chemical Substances  
 ELINCS European List of Notified Chemical Substances  
 EN European Norms  
 EPA United States Environmental Protection Agency (United States of America)  
 ErCx, EμCx, Erlx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)  
 etc. et cetera  
 EU European Union  
 EVAL Ethylene-vinyl alcohol copolymer  
 Fax. Fax number  
 gen. general  
 GHS Globally Harmonized System of Classification and Labelling of Chemicals  
 GWP Global warming potential  
 Koc Adsorption coefficient of organic carbon in the soil  
 Kow octanol-water partition coefficient  
 IARC International Agency for Research on Cancer  
 IATA International Air Transport Association  
 IBC (Code) International Bulk Chemical (Code)  
 IMDG-code International Maritime Code for Dangerous Goods  
 incl. including, inclusive  
 IUCLID International Uniform Chemical Information Database  
 IUPAC International Union for Pure Applied Chemistry  
 LC50 Lethal Concentration to 50 % of a test population  
 LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)  
 Log Koc Logarithm of adsorption coefficient of organic carbon in the soil  
 Log Kow, Log Pow Logarithm of octanol-water partition coefficient  
 LQ Limited Quantities  
 MARPOL International Convention for the Prevention of Marine Pollution from Ships  
 n.a. not applicable  
 n.av. not available  
 n.c. not checked  
 n.d.a. no data available  
 NIOSH National Institute for Occupational Safety and Health (USA)  
 NLP No-longer-Polymer  
 NOEC, NOEL No Observed Effect Concentration/Level  
 OECD Organisation for Economic Co-operation and Development  
 org. organic  
 OSHA Occupational Safety and Health Administration (USA)  
 PBT persistent, bioaccumulative and toxic  
 PE Polyethylene  
 PNEC Predicted No Effect Concentration  
 ppm parts per million  
 PVC Polyvinylchloride  
 REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)  
 REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.  
 RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)  
 SVHC Substances of Very High Concern  
 Tel. Telephone  
 TOC Total organic carbon  
 UN RTDG United Nations Recommendations on the Transport of Dangerous Goods  
 VOC Volatile organic compounds  
 vPvB very persistent and very bioaccumulative  
 wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

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No responsibility.

These statements were made by:

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