



Revision date: 17 Mar 2022 Version: 4 Print date: 12 Apr 2022

**Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)**

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

**1.1. Product identifier**

Trade name/designation:

RAVENOL Getriebeoel MZG SAE 80W-90 GL-4

Article No.:

1223105

UFI:

JRHU-7M4X-S7J3-82S5

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

Use of the substance/mixture:

Lubricant

**1.3. Details of the supplier of the safety data sheet**

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

**Ravensberger Schmierstoffvertrieb GmbH**

Produktsicherheit

Jöllenbecker Str. 2

33824 Werther

Germany

**Telephone:** +49 5203 9719 0

**Telefax:** +49 5203 9719 40

**E-mail:** kontakt@ravenol.de

**Website:** www.ravenol.de

**E-mail (competent person):** sdb@ravenol.de

**1.4. Emergency telephone number**

24 hr. emergency phone number, 24h: +49 700 24 112 112 (Contract ID: RAV) / +1 872 5888271  
(Contract ID: RAV)

**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
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	
Hazardous to the aquatic environment ( <i>Aquatic Chronic 3</i> )	H412: Harmful to aquatic life with long lasting effects.	

\* **2.2. Label elements**

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

**Hazard pictograms:**



**GHS07**

Exclamation mark

**Signal word:** Warning



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**Hazard components for labelling:**

Polysulfides, di-tert-Bu; C16-18-(even numbered, saturated and unsaturated)-alkylamines; Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

**Hazard statements for health hazards**

H317	May cause an allergic skin reaction.
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**Hazard statements for environmental hazards**

H412	Harmful to aquatic life with long lasting effects.
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**Precautionary statements Prevention**

P261	Avoid breathing vapours and spray.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye/face protection.

**Precautionary statements Response**

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

**Precautionary statements Disposal**

P501	Dispose of contents/container to an appropriate recycling or disposal facility.
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**2.3. Other hazards**

**Other adverse effects:**

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

**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.: 68937-96-2 EC No.: 273-103-3 REACH No.: 01-2119540515-43	<b>Polysulfides, di-tert-Bu</b> Aquatic Chronic 4 (H413), Skin Sens. 1 (H317) <b>Warning</b>	1 - < 2 weight-%
EC No.: 931-384-6 REACH No.: 01-2119493620-38	<b>Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)</b> Acute Tox. 4 (H302), Aquatic Chronic 2 (H411), Eye Dam. 1 (H318), Skin Sens. 1 (H317) <b>Danger</b>	0 - < 0.2 weight-%
CAS No.: 1213789-63-9 EC No.: 627-034-4 REACH No.: 01-2119473797-19	<b>C16-18-(even numbered, saturated and unsaturated)-alkylamines</b> Acute Tox. 4 (H302), Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Asp. Tox. 1 (H304), Eye Dam. 1 (H318), STOT RE 2 (H373), STOT SE 3 (H335), Skin Corr. 1B (H314) <b>Danger</b> M-factor (acute): 10 M-factor (chronic): 10	0 - < 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). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

**Following inhalation:**

Provide fresh air. In case of respiratory tract irritation, consult a physician.

**In case of skin contact:**

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.



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**After eye contact:**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. In case of eye irritation consult an ophthalmologist.

**Following ingestion:**

Do NOT induce vomiting. Consult a doctor immediately. Rinse mouth. Let water be drunken in little sips (dilution effect).

**Self-protection of the first aider:**

Use personal protection equipment. No direct artificial respiration to be given by first aider.

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

May cause an allergic skin reaction.

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

Treat symptomatically. Observe risk of aspiration if vomiting occurs.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media:**

Co-ordinate fire-fighting measures to the fire surroundings.

Carbon dioxide (CO<sub>2</sub>)

Extinguishing powder

alcohol resistant foam

Use water spray jet to protect personnel and to cool endangered containers.

**Unsuitable extinguishing media:**

Full water jet

**5.2. Special hazards arising from the substance or mixture**

During heating or in case of fire, toxic gases is possible.

The formation of combustible vapours is possible at temperatures above: Flash point

**Hazardous combustion products:**

Carbon monoxide, Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>),

During heating or in case of fire, toxic gases is possible.

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus. Protective clothing.

**5.4. Additional information**

Do not inhale explosion and combustion gases. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**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. Special danger of slipping by leaking/spilling product.

**Protective equipment:**

Personal protection equipment: see section 8

**Emergency procedures:**

Eliminate all ignition sources if safe to do so. Remove persons to safety. Provide adequate ventilation.

**6.1.2. For emergency responders**

**Personal protection equipment:**

Use personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. 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 containment:**

Suitable material for taking up: Sand, Kieselguhr, Universal binder, Chemical binding agents, containing acids



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Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

**For cleaning up:**

Remove from the water surface (e.g. skimming, sucking). Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

**Other information:**

Treat the recovered material as prescribed in the section on waste disposal.

**6.4. Reference to other sections**

Safe handling: see section 7

Disposal: see section 13

Personal protection equipment: see section 8

**6.5. Additional information**

Clear spills immediately. Use appropriate container to avoid environmental contamination.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Protective measures**

**Advices on safe handling:**

Personal protection equipment: see section 8.

When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Do not put any product-impregnated cleaning rags into your trouser pockets. Clear spills immediately. Use appropriate container to avoid environmental contamination.

**Fire prevent measures:**

No special fire protection measures are necessary.

**Environmental precautions:**

Shafts and sewers must be protected from entry of the product.

**Advices on general occupational hygiene**

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

**7.2. Conditions for safe storage, including any incompatibilities**

**Technical measures and storage conditions:**

Keep container tightly closed in a cool, well-ventilated place.

**Requirements for storage rooms and vessels:**

Suitable container/equipment material: Floors should be impervious, resistant to liquids and easy to clean. Shafts and sewers must be protected from entry of the product.

Keep/Store only in original container.

**Hints on storage assembly:**

not required

**Storage class (TRGS 510, Germany):** 10 - Combustible liquids that cannot be assigned to any of the above storage classes

**Further information on storage conditions:**

Store in a cool dry place. Keep away from heat.

**7.3. Specific end use(s)**

**Recommendation:**

Observe technical data sheet.



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## 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)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 300 mg/m <sup>3</sup> ② 600 mg/m <sup>3</sup> ⑤ (C9-C14 Aliphaten)
VLA (FR)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 1,000 mg/m <sup>3</sup> ② 1,500 mg/m <sup>3</sup> ⑤ (hydrocarbures C9-C12)
NO	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 50 ppm (275 mg/m <sup>3</sup> ) ⑤ (White Spirit (aromatinnhold < 22 %))
DFG (DE)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 5 mg/m <sup>3</sup> ② 20 mg/m <sup>3</sup> ⑤ (Aerosol, alveolengängige Fraktion)
MAK (AT)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 200 mL/m <sup>3</sup> ② 400 mL/m <sup>3</sup> ⑤ (für Kohlenwasserstoffgemische mit einem Gehalt an aromatischen Kohlenwasserstoffen von weniger als 1 %, an n-Hexan von weniger als 5 % und an Cyclo-/Isohexanen von weniger als 25 %)
MAK (AT)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 170 mL/m <sup>3</sup> ② 340 mL/m <sup>3</sup> ⑤ (für Kohlenwasserstoffgemische mit einem Gehalt an aromatischen Kohlenwasserstoffen von weniger als 1 %, an n-Hexan von weniger als 5 % und an Cyclo-/Isohexanen von 25 % oder mehr)
WEL (GB)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 1,200 mg/m <sup>3</sup> ⑤ (> or = C7, Normal and branched chain alkanes)
WEL (GB)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 800 mg/m <sup>3</sup> ⑤ (> or = C7, Cycloalkanes)
DFG (DE)	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 50 ppm (350 mg/m <sup>3</sup> ) ② 100 ppm (700 mg/m <sup>3</sup> ) ⑤ (Dampf)
RU	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 100 mg/m <sup>3</sup> ③ 300 mg/m <sup>3</sup>
CH	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 50 ppm (350 mg/m <sup>3</sup> ) ② 100 ppm (700 mg/m <sup>3</sup> ) ⑤ (Dampf)
SI	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 700 mg/m <sup>3</sup>



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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
RO	Hydrocarbons, C12-C15, n-alkanes, iso-alkanes, cyclenes, <2% aromatics <b>CAS No.:</b> 64742-47-8 <b>EC No.:</b> 920-107-4	① 700 mg/m <sup>3</sup> ② 1,000 mg/m <sup>3</sup>

### 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
Polysulfides, di-tert-Bu <b>CAS No.:</b> 68937-96-2 <b>EC No.:</b> 273-103-3	14.5 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
Polysulfides, di-tert-Bu <b>CAS No.:</b> 68937-96-2 <b>EC No.:</b> 273-103-3	1.66 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) <b>EC No.:</b> 931-384-6	8.56 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) <b>EC No.:</b> 931-384-6	12.5 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	0.38 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	1 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, local effects
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	1 mg/cm <sup>2</sup>	① DNEL worker ② Acute - inhalation, local effects

Substance name	PNEC Value	① PNEC type
Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) <b>EC No.:</b> 931-384-6	0.0012 mg/L	① PNEC aquatic, freshwater
Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) <b>EC No.:</b> 931-384-6	0.12 µg/L	① PNEC aquatic, marine water
Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) <b>EC No.:</b> 931-384-6	24.33 mg/L	① PNEC sewage treatment plant
Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) <b>EC No.:</b> 931-384-6	3.13 mg/kg bw/day	① PNEC sediment, freshwater



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Substance name	PNEC Value	① PNEC type
Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched) <b>EC No.:</b> 931-384-6	0.313 mg/kg bw/day	① PNEC sediment, marine water
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	0.26 µg/L	① PNEC aquatic, freshwater
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	0.026 µg/L	① PNEC aquatic, marine water
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	3.76 mg/kg	① PNEC sediment, freshwater
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	0.376 mg/kg	① PNEC sediment, marine water
C16-18-(even numbered, saturated and unsaturated)-alkylamines <b>CAS No.:</b> 1213789-63-9 <b>EC No.:</b> 627-034-4	10 mg/kg	① PNEC soil

\* **8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

See section 7. No additional measures necessary.

**8.2.2. Personal protection equipment**



**Eye/face protection:**

During transfer: Eye glasses with side protection  
 Wear eye/face protection. EN 166

**Skin protection:**

Hand protection

Suitable material: NBR (Nitrile rubber), PVC (polyvinyl chloride), CR (polychloroprene, chloroprene rubber)  
 Thickness of the glove material:  $\geq 0,4$  mm

Breakthrough time: 480 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.

Tested protective gloves must be worn: EN ISO 374

Suitable protective clothing: Protective clothing

**Respiratory protection:**

Usually no personal respirative protection necessary.

**8.2.3. Environmental exposure controls**

See section 7. No additional measures necessary.

**8.3. Additional information**

Mineral oil mist limits:

OSHA PEL - value  $5 \text{ mg} / \text{m}^3$ , ACGIH STEL - value of  $10 \text{ mg} / \text{m}^3$

**SECTION 9: Physical and chemical properties**

\* **9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state:** Liquid

**Colour:** yellow





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**Odour:** characteristic

**Safety relevant basis data**

Parameter	Value	at °C	① Method ② Remark
pH	<i>not applicable</i>		
Melting point	<i>not determined</i>		
Freezing point	<i>not determined</i>		
Initial boiling point and boiling range	<i>not determined</i>		
Decomposition temperature	<i>not determined</i>		
Flash point	244 °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 applicable</i>		
Density	880 kg/m <sup>3</sup>	15 °C	
Relative density	<i>not applicable</i>		
Bulk density	<i>not applicable</i>		
Water solubility	practically insoluble		
Partition coefficient: n-octanol/water	<i>not applicable</i>		
Dynamic viscosity	<i>not determined</i>		
Kinematic viscosity	127 mm <sup>2</sup> /s	40 °C	

**9.2. Other information**

No data available.

**SECTION 10: Stability and reactivity**

\* **10.1. Reactivity**

No known hazardous reactions. Risk of explosion if heated under confinement.

**10.2. Chemical stability**

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

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

To avoid thermal decomposition do not overheat.

**10.5. Incompatible materials**

Materials to avoid: Acid, Oxidising agent, Reducing agent

**10.6. Hazardous decomposition products**

Hazardous combustion products: Carbon monoxide, Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), During heating or in case of fire, toxic gases is possible.

**SECTION 11: Toxicological information**

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

<b>C16-18-(even numbered, saturated and unsaturated)-alkylamines</b> CAS No.: 1213789-63-9 EC No.: 627-034-4
<b>ATE (oral):</b> 500 mg/kg
<b>LD<sub>50</sub> oral:</b> >1,200 mg/kg (Rat) OECD 401
<b>LD<sub>50</sub> dermal:</b> >2,000 mg/kg (Rat) OECD 402
<b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> >5 mg/L 4 h

**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.





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**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.  
Frequently or prolonged contact with skin may cause dermal irritation.

**Serious eye damage/irritation:**

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

**Respiratory or skin sensitisation:**

Contains Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched). May produce an allergic reaction.

**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:**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties:**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

**SECTION 12: Ecological information**

\* **12.1. Toxicity**

<b>Polysulfides, di-tert-Bu</b> CAS No.: 68937-96-2 EC No.: 273-103-3
EC <sub>50</sub> : 63 mg/L 2 d (crustaceans)
EC <sub>50</sub> : >100 mg/L 3 d (Algae/water plant)
<b>Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)</b> EC No.: 931-384-6
LC <sub>50</sub> : ≈24 mg/L 4 d
EC <sub>50</sub> : 91.4 mg/L 2 d (crustaceans)
<b>C16-18-(even numbered, saturated and unsaturated)-alkylamines</b> CAS No.: 1213789-63-9 EC No.: 627-034-4
LC <sub>50</sub> : >0.84 mg/L 4 d (fish)
EC <sub>50</sub> : >0.32 mg/L 2 d (crustaceans)
EC <sub>50</sub> : >0.39 mg/L 3 d (Algae/water plant)
NOEC: >0.63 mg/L 4 d (fish)

**Aquatic toxicity:**

Harmful to aquatic life with long lasting effects.

**Assessment/classification:**

No data available.

**Additional ecotoxicological information:**

Do not allow uncontrolled discharge of product into the environment.

**12.2. Persistence and degradability**

**Additional information:**

No data available.

**12.3. Bioaccumulative potential**

<b>Polysulfides, di-tert-Bu</b> CAS No.: 68937-96-2 EC No.: 273-103-3
Log K <sub>OW</sub> : = 6



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**Partition coefficient: n-octanol/water:**  
not applicable

**Accumulation / Evaluation:**  
No data available.

**12.4. Mobility in soil**  
No data available.

\* **12.5. Results of PBT and vPvB assessment**

<b>Polysulfides, di-tert-Bu</b> CAS No.: 68937-96-2 EC No.: 273-103-3
<b>Results of PBT and vPvB assessment:</b> This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
<b>Reaction products of bis (4-methyl pentan-2-yl) phosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)</b> EC No.: 931-384-6
<b>Results of PBT and vPvB assessment:</b> This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
<b>C16-18-(even numbered, saturated and unsaturated)-alkylamines</b> CAS No.: 1213789-63-9 EC No.: 627-034-4
<b>Results of PBT and vPvB assessment:</b> This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

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

**12.6. Endocrine disrupting properties**

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

**12.7. Other adverse effects**  
No data available

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Dispose of waste according to applicable legislation.

**Waste treatment options**

**Appropriate disposal / Product:**

Dispose of waste according to applicable legislation.

**Appropriate disposal / Package:**

Non-contaminated packages may be recycled.

**Other disposal recommendations:**

Consult the appropriate local waste disposal expert about waste disposal.

**13.2. Additional information**

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

**SECTION 14: Transport information**

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<b>14.1. UN number or ID number</b>			
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.
<b>14.2. UN proper shipping name</b>			
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.
<b>14.3. Transport hazard class(es)</b>			
not relevant	not relevant	not relevant	not relevant
<b>14.4. Packing group</b>			
not relevant	not relevant	not relevant	not relevant
<b>14.5. Environmental hazards</b>			
not relevant	not relevant	not relevant	not relevant
<b>14.6. Special precautions for user</b>			
not relevant	not relevant	not relevant	not relevant



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

Not applicable.

## 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], Hazard categories:

- E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1
- E2 Hazardous to the Aquatic Environment in Category Chronic 2

Safety data sheet available on request.

#### 15.1.2. National regulations

##### [DE] National regulations

##### Restrictions of occupation

Observe employment restrictions according to the Law for the protection of working youth (Protection of Young Persons Act - JArbSchG). Observe employment restrictions according to the Act on the Protection of Mothers at Work, in Training and in Studies (Maternity Protection Act - MuSchG).

##### Störfallverordnung

##### for substances contained in the product:

Hazard categories:

- E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1
- E2 Hazardous to the Aquatic Environment in Category Chronic 2

##### Technische Anleitung Luft (TA-Luft)

##### Remark:

To follow: 5.2.5

##### Water hazard class

##### WGK:

2 - deutlich wassergefährdend

##### Source:

Self-classification (mixture; calculation rule).  
Identification number 436

##### Technische Regeln für Gefahrstoffe

TRGS 510  
TRGS 500

##### Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)

Berufsgenossenschaftliche Informationen (DGUV-Informationen) 868  
Berufsgenossenschaftliche Regeln (DGUV-Regeln) 189, 190, 192, 195

##### Other regulations, restrictions and prohibition regulations

Altöl-Verordnung (AltöIV)

##### [DK] National regulations

##### Other regulations, restrictions and prohibition regulations

Dänemark: Bekendtgørelse af lov om arbejdsmiljø: Beskæftigelsesministeriets lovbekendtgørelse nr. 1072 af 7. september 2010  
Lister over stoffer og processer, der anses for at være kræftfremkaldende

##### [FR] National regulations

##### Other regulations, restrictions and prohibition regulations

Frankreich: Tableaux de maladies professionnelles  
Nomenclature des installations classées pour la protection de l'environnement  
Articles L. 4523-1 à L. 4523-17, L. 4611-1 à L. 4614-16, R. 4523-1 à R. 4523-17 et R. 4612-1 à R. 4615-21  
du Code du travail

##### [NL] National regulations

##### Other regulations, restrictions and prohibition regulations

Niederlande: Lijst vankankerverwekkende, mutagene en voor de voortplanting giftige stoffen (SZW)  
Algemeene beoordelingsmethodiek Water (ABM)  
Nederlandse emissierichtlijn (NeR)  
NIET-Limitatieve lijst an voor de voortplanting giftige stoffen - Borstvoeding  
NIET-Limitatieve lijst an voor de voortplanting giftige stoffen - Vruchtbaarheid  
NIET-Limitatieve lijst an voor de voortplanting giftige stoffen - Ontwikkeling



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SZW-lijst van kankerverwekkende stoffen  
 SZW-lijst van mutagene stoffen  
 Wet van 18 maart 1999, houdende bepalingen ter verbetering van de arbeidsomstandigheden (Arbeidsomstandighedenwet)  
 Wet op de ondernemingsraden 1971



**[CH] National regulations**

**Other regulations, restrictions and prohibition regulations**

Mengenschwelle (Schweiz - StFV)  
 Gefahrencode  
 Brandverhütung, BVD (Schweiz)

**15.2. Chemical Safety Assessment**

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

**15.3. Additional information**

No data available.

**SECTION 16: Other information**

\* **16.1. Indication of changes**

2.1.	Classification of the substance or mixture
2.2.	Label elements
3.2.	Mixtures
4.2.	Most important symptoms and effects, both acute and delayed
8.1.	Control parameters
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
10.1.	Reactivity
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
12.1.	Toxicity
12.5.	Results of PBT and vPvB assessment
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes
16.4.	Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]
16.5.	Relevant R-, H- and EUH-phrases (Number and full text)

**16.2. Abbreviations and acronyms**

See overview table at [www.euphrac.eu](http://www.euphrac.eu)

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

**16.3. Key literature references and sources for data**

67/548/EEC - Dangerous Substances Directive  
 1999/45/EEC - Dangerous Preparations Directive  
 EC 1907/2006 - REACH Regulation  
 1272/2008 EC - Regulation on classification, labeling and packaging of substances and mixtures, and amending Directives 67/548/EEC and 1999/45/EC and Regulation (EC) No 1907/2006  
 Regulation (EC) No 1907/2006 (REACH), Annex II  
 European Chemicals Agency (ECHA), C & L classification and labeling inventory  
 European Chemicals Agency (ECHA), ECHA CHEM Registered substances  
 OECD The Global Portal to Information on Chemical Substances (ChemPortal)  
 Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA): GESTIS substance database and International limit values for chemical substances  
 Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances hazardous to water Rigoletto (catalog substances hazardous to water)



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\* **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
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	
Hazardous to the aquatic environment ( <i>Aquatic Chronic 3</i> )	H412: Harmful to aquatic life with long lasting effects.	

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

Hazard statements	
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

**16.6. Training advice**

No data available

**16.7. Additional information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

\* Data changed compared with the previous version