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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 Break-In Oil SAE 20W-50

Article No.:

1114110

UFI:

U6SJ-EFVA-3CEV-DVGM

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
Serious eye damage/eye irritation (Eye Irrit. 2)	H319: Causes serious eye irritation.	Calculation method.

* **2.2. Label elements**

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

Hazard pictograms:



GHS07

Exclamation mark

Signal word: Warning

Hazard components for labelling:

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate); Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts

Hazard statements for health hazards	
H319	Causes serious eye irritation.



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Supplemental hazard information: none

Precautionary statements Prevention

P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye/face protection.

Precautionary statements Response

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: 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.: 4259-15-8 EC No.: 224-235-5 REACH No.: 01-2119493635-27	zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) Aquatic Chronic 2 (H411), Eye Dam. 1 (H318) Danger	1 - < 2 weight-%
CAS No.: 84605-29-8 EC No.: 283-392-8 REACH No.: 01-2119493626-26	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts Aquatic Chronic 2 (H411), Eye Dam. 1 (H318), Skin Irrit. 2 (H315) Danger Specific concentration limit (SCL) Skin Irrit. 2; H315: 6.25% ≤ C < 100% Eye Irrit. 2; H319: 10% ≤ C < 12.5% Eye Dam. 1; H318: 12.5% ≤ C < 100%	< 0.3 weight-%
CAS No.: 91-20-3 EC No.: 202-049-5 Index No.: 601-052-00-2	naphthalene Acute Tox. 4 (H302), Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Carc. 2 (H351) Warning	< 0.0003 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. Consult a doctor immediately.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Consult a doctor immediately.

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. Causes serious eye irritation.

Following ingestion:

Rinse mouth thoroughly with water. Do NOT induce vomiting. Consult a doctor immediately.

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**

Causes serious eye irritation..



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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 (CO₂)

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

When hot, product develops flammable vapours.

Hazardous combustion products:

Carbon monoxide, Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Gases/vapours, toxic

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 appropriate respiratory protection.

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

Prevent spread over a wide area (e.g. by containment or oil barriers).

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



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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:

Wear personal protection equipment (refer to 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.

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, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 50 mg/m ³ ② 100 mg/m ³ ⑤ (C9-C14 Aromaten)
VLA (FR)	Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 150 mg/m ³ ⑤ (hydrocarbures, benzène C9-C12)
NO	Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 25 ppm (120 mg/m ³) ⑤ (White Spirit (aromatinnhold > 22 %))
CH	Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 100 ppm (525 mg/m ³) ⑤ (Testbenzin, Aromatengehalt 10-30%, White Spirit)



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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
MAK (AT)	Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 20 mL/m ³ ② 40 mL/m ³ ⑤ (für Kohlenwasserstoffgemische mit einem Gehalt an aromatischen Kohlenwasserstoffen von mehr als 25 %)
MAK (AT)	Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 70 mL/m ³ ② 140 mL/m ³ ⑤ (für Kohlenwasserstoffgemische mit einem Gehalt an aromatischen Kohlenwasserstoffen von 1 % bis 25 % und an Hexanen von weniger als 1 %)
WEL (GB)	Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 500 mg/m ³ ⑤ (Aromatics)
SI	Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 64742-94-5 EC No.: 918-811-1	① 50 mg/m ³
CH	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ⑤ (kann über die Haut aufgenommen werden)
BE	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (53 mg/m ³) ② 15 ppm (80 mg/m ³) ⑤ (peut être absorbé par la peau)
CZ	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 9.4 ppm (50 mg/m ³) ② 18.8 ppm (100 mg/m ³)
PL	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 20 mg/m ³ ② 50 mg/m ³ ⑤ (może przenikać przez skórę do organizmu)
NO	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
IE	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
HTP (FI)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 1 ppm (5 mg/m ³) ② 2 ppm (10 mg/m ³)
LT	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ⑤ (Kancerogeninės)
SE	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ③ 15 ppm (80 mg/m ³)
NPEL (SK)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ② 15 ppm (80 mg/m ³)
TRGS 900 (DE)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 0.4 ppm (2 mg/m ³) ② 1.6 ppm (8 mg/m ³) ⑤ (Aerosol und Dampf, kann über die Haut aufgenommen werden)
DK	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ② 20 ppm (100 mg/m ³)



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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
BG	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 50 mg/m ³ ② 75 mg/m ³
HR	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
ES	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (53 mg/m ³) ② 15 ppm (80 mg/m ³) ⑤ (puede ser absorbido a través dérmica)
RO	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
EE	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
LV	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
Alberta (CA)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (52 mg/m ³) ② 15 ppm (79 mg/m ³)
BC (CA)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm ⑤ (may be absorbed through the skin)
MY	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (52 mg/m ³)
IOELV (EU)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
VLA (FR)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
SI	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 50 mg/m ³ ② 50 mg/m ³ ⑤ (frakcija ki jo je mogoče vdihniti računati je treba z možnostjo prodiranja skozi kožo)
TW	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (52 mg/m ³)
KR	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ② 15 ppm (75 mg/m ³)
IS	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
CN	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 50 mg/m ³ ② 75 mg/m ³ ⑤ (#####)
RU	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	③ 20 mg/m ³
HU	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 50 mg/m ³
GR	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)



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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
NL	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 50 mg/m ³ ② 80 mg/m ³
MAK (AT)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ⑤ (kann über die Haut aufgenommen werden)
SI	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm ② 10 ppm ⑤ (računati je treba z možnostjo prodiranja skozi kožo)
TR	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
Québec (CA)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (52 mg/m ³) ② 15 ppm (79 mg/m ³)
OSHA (US)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
NIOSH (US)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ② 15 ppm (75 mg/m ³)
ACGIH (US)	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (52 mg/m ³) ② 15 ppm (79 mg/m ³) ⑤ (may be absorbed through the skin)

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
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) CAS No.: 4259-15-8 EC No.: 224-235-5	6.6 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	8.31 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	2.11 mg/m ³	① DNEL Consumer ② Long-term - inhalation, systemic effects
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	12.1 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	6.1 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	0.24 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	25 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects



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Substance name	DNEL value	① DNEL type ② Exposure route
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	25 mg/m ³	① DNEL worker ② Long-term - inhalation, local effects
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	3.57 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects

Substance name	PNEC Value	① PNEC type
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	4 µg/L	① PNEC aquatic, freshwater
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	4.6 µg/L	① PNEC aquatic, marine water
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	100 mg/L	① PNEC sewage treatment plant
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	0.02203 mg/ kg bw/day	① PNEC sediment, freshwater
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	0.002203 mg/ kg bw/day	① PNEC sediment, marine water
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	0.00206 mg/ kg bw/day	① PNEC soil
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	10.67 mg/kg bw/day	① PNEC secondary poisoning
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8	45 µg/L	① PNEC aquatic, intermittent release
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	2.4 µg/L	① PNEC aquatic, freshwater
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	2.4 µg/L	① PNEC aquatic, marine water
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	2.9 mg/L	① PNEC sewage treatment plant
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	20 µg/L	① PNEC aquatic, intermittent release

* **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



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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 mg / m³, ACGIH STEL - value of 10 mg / m³

SECTION 9: Physical and chemical properties

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

Appearance

Physical state: Liquid

Colour: red

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 applicable</i>		
Flash point	242 °C		
Evaporation rate	<i>not determined</i>		
Auto-ignition temperature	<i>not determined</i>		
Upper/lower flammability or explosive limits	<i>not applicable</i>		
Vapour pressure	<i>not determined</i>		
Vapour density	<i>not applicable</i>		
Density	884 kg/m ³	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	165 mm ² /s	40 °C	

* **9.2. Other information**

Not applicable

SECTION 10: Stability and reactivity

* **10.1. Reactivity**

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



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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, Oxidizing agent, Reducing agent

* 10.6. Hazardous decomposition products

Hazardous combustion products: Carbon monoxide, Carbon dioxide (CO₂), Nitrogen oxides (NO_x),
During heating or in case of fire, toxic gases is possible.

Further information

No information available.

SECTION 11: Toxicological information

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

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) CAS No.: 4259-15-8 EC No.: 224-235-5
LD₅₀ oral: 3,100 mg/kg (rats)
LD₅₀ dermal: >5,000 mg/kg (rabbits)
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8
LD₅₀ dermal: 2,002 mg/kg
LC₅₀ Acute inhalation toxicity (vapour): 2.3 mg/L 4 h (Rat)
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5
LD₅₀ oral: >533 mg/kg (Mouse)
LD₅₀ dermal: >16,000 mg/kg (Rat)
LC₅₀ Acute inhalation toxicity (dust/mist): >0.4 mg/L 4 h (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:

Causes serious eye irritation.

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:

No data available



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* **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**

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) CAS No.: 4259-15-8 EC No.: 224-235-5
LC ₅₀ : 4.4 mg/L 4 d (fish, rainbow trout) OECD 203
LC ₅₀ : 75 mg/L 2 d (crustaceans, Daphnia magna) OECD 202
NOEC: 32 mg/L 2 d (crustaceans, Daphnia magna) OECD 202
NOEC: 220 mg/L 3 d (Algae/water plant, Scenedesmus subspicatus) OECD 201
ErC ₅₀ : 410 mg/L 3 d (Algae/water plant, Scenedesmus subspicatus) OECD 201
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8
LC ₅₀ : 46 mg/L 4 d (fish)
NOEC: ≥0.4 - ≤0.8 mg/L 21 d (crustaceans)
NOEC: ≥21 - ≤24 mg/L 3 d (Algae/water plant)
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5
LC ₅₀ : >1.2 - <2.1 mg/L 4 d (fish)
EC ₅₀ : >2.16 mg/L 2 d (crustaceans)
EC ₅₀ : >2.96 mg/L 4 d (Algae/water plant)

Assessment/classification:

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

Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment.

12.2. Persistence and degradability

Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8
Biodegradation: not determined
Remark: Kenn-Nr. UBA: 10652

Additional information:

The product has not been tested.

* **12.3. Bioaccumulative potential**

Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8
Log K _{OW} : 0.56
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5
Log K _{OW} : 3.7
Bioconcentration factor (BCF): 168

Partition coefficient: n-octanol/water:

not applicable

Accumulation / Evaluation:

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

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

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) CAS No.: 4259-15-8 EC No.: 224-235-5
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts CAS No.: 84605-29-8 EC No.: 283-392-8
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.



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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 information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of waste according to applicable legislation.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code packaging

Remark:

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)
14.1. UN number or ID number			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es)			
not relevant	not relevant	not relevant	not relevant
14.4. Packing group			
not relevant	not relevant	not relevant	not relevant
14.5. Environmental hazards			
not relevant	not relevant	not relevant	not relevant
14.6. Special precautions for user			
not relevant	not relevant	not relevant	not relevant

14.7. Maritime transport in bulk according to IMO instruments

Not 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:



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

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

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

TRGS 900

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

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)



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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
2.3.	Other hazards
3.2.	Mixtures
4.2.	Most important symptoms and effects, both acute and delayed
5.2.	Special hazards arising from the substance or mixture
5.3.	Advice for firefighters
6.1.	Personal precautions, protective equipment and emergency procedures
8.1.	Control parameters
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
9.2.	Other information
10.1.	Reactivity
10.5.	Incompatible materials
10.6.	Hazardous decomposition products
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
11.2.	Information on other hazards
12.1.	Toxicity
12.3.	Bioaccumulative potential
12.5.	Results of PBT and vPvB assessment
12.6.	Endocrine disrupting properties
12.7.	Other adverse effects
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
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

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)

* 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
Serious eye damage/eye irritation (Eye Irrit. 2)	H319: Causes serious eye irritation.	Calculation method.



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

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
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.

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