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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 DW-1 Fluid

Article No.:

1211125

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]**

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

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

According to EC directives or the corresponding national regulations the product does not have to be labelled.

Hazard statements: none**Supplemental hazard information**

EUH208	Contains 4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate. May produce an allergic reaction.
EUH210	Safety data sheet available on request.

Precautionary statements: none*** 2.3. Other hazards****Other adverse effects:**

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



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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.: 72623-87-1 EC No.: 276-738-4 REACH No.: 01-2119474889-13	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based Asp. Tox. 1 (H304) Danger Specific concentration limit (SCL) Asp. Tox. 1; H304: 0% ≤ C < 100%	0 - < 1.5 weight-%
CAS No.: 125643-61-0 EC No.: 406-040-9 Index No.: 607-530-00-7 REACH No.: 01-0000015551-76	Isomer mixture of C7-9-alkyl-3- (3,5-di-trans-butyl-4-hydroxyphenyl) propionate Aquatic Chronic 4 (H413)	0 - < 1.5 weight-%
EC No.: 424-820-7 REACH No.: 01-0000017126-75	Reaction product of alkylthioalcohol and substituted phosphorus compound Acute Tox. 4 (H312), Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Skin Corr. 1B (H314) Danger M-factor (acute): 10 M-factor (chronic): 10	0 - < 0.3 weight-%
CAS No.: 93882-40-7 EC No.: 299-434-3 REACH No.: 01-2120735527-50	4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate Aquatic Chronic 2 (H411), Eye Irrit. 2 (H319), Skin Sens. 1 (H317) Warning	0 - < 0.15 weight-%
CAS No.: 1189173-42-9 EC No.: 918-811-1 REACH No.: 01-2119463583-34	Hydrocarbons, C10, aromatics, <1% naphthalene Aquatic Chronic 2 (H411), Asp. Tox. 1 (H304), STOT SE 3 (H336) Danger	0 - < 0.02 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 - < 0.0002 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.

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

Contains 4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate. May produce an allergic reaction.

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

Treat symptomatically. Observe risk of aspiration if vomiting occurs.



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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
- Hazardous combustion products:**
Carbon monoxide, Carbon dioxide (CO₂), Nitrogen oxides (NO_x),
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
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
- 6.5. Additional information**
Clear spills immediately. Use appropriate container to avoid environmental contamination.



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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.

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
PL from 12 Jun 2018	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Mgła olejowa mineralny)
MAK (AT)	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Ölnebel, mineralisch (einatembare Fraktion))
BE	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Brouillard d'huile minéral)
Québec (CA)	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ② 10 mg/m ³ ⑤ (Oil mist mineral)



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HU from 28 May 2022	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Olajköd ásványi) T
SE	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 1 mg/m ³ ② 3 mg/m ³ ⑤ (Oljeånga eller rök)
ES	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ② 10 mg/m ³ ⑤ (Niebla de aceite mineral) am
NL	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Olienevel mineraal)
OSHA (US)	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Oil mist mineral)
NIOSH (US)	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ② 10 mg/m ³ ⑤ (Oil mist mineral)
ACGIH (US) from 1 Jan 2010	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Oil mist mineral, inhalable fraction)
CZ	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ② 10 mg/m ³ ⑤ (Rozprášený olej (olejová mlhovina) minerální)
NO	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 1 mg/m ³ ⑤ (Oljetåke mineralsk)
NPEL (SK) from 23 Nov 2011	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 ppm (1 mg/m ³) ② 15 ppm (3 mg/m ³) ⑤ (Olejová hmlovina minerálny)
Alberta (CA)	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ② 10 mg/m ³ ⑤ (Oil mist mineral)
HTP (FI)	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Öljysumu)
LT	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 1 mg/m ³ ② 3 mg/m ³ ⑤ (Tepalo rūkas arba dūmai)
BC (CA) from 1 Jan 2007	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 0.2 mg/m ³ ⑤ (Oil mist mineral) 1
MY from 1 Jan 2000	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Kabus minyak mineral)



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BC (CA) from 1 Jan 2007	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 1 mg/m ³ ⑤ (Oil mist mineral, severely refined)
TW	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (## ##)
GR from 1 Oct 2016	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Εκκνέφωμα λαδιού, ορυκτό)
MY from 1 Jan 2000	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 10 mg/m ³ ⑤ (Kabus minyak, vegetal)
RO from 21 Aug 2018	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ② 10 mg/m ³ ⑤ (Ceata uleioasa mineral)
CH from 1 Jan 2022	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (einatembare Fraktion) C2; Tox: Lunge; Messmeth: NIOSH DFG
LV from 12 Jul 2018	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Eļļas migla)
JP	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 3 mg/m ³ ⑤ (#####)
IDLH (US) from 1 Jan 1994	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 2,500 mg/m ³
IE from 1 Apr 2016	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4	① 5 mg/m ³ ⑤ (Oil mist mineral, inhalable fraction)
CH from 1 Jan 2022	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ⑤ (Dampf und Aerosol; kann über die Haut aufgenommen werden) H C2; Tox: Blut OAW Auge; Messmeth: NIOSH OSHA
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) D
CZ from 1 Mar 2020	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 from 12 Jun 2018	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) skóra
NO	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ⑤ E
IE from 17 Jan 2020	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ⑤ IOELV



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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 (Kancerogeninés) K
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) from 23 Nov 2011	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) ⑤ K
TRGS 900 (DE) from 23 Jun 2022	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) AGS, H, Y, EU, 11, 27
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) ⑤ EK
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) vía dérmica, VLI
RO from 21 Aug 2018	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ⑤ C2
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) from 1 Dec 2021	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) 1
BC (CA) from 1 Jun 2018	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm ⑤ (may be absorbed through the skin) Skin; 2B
MY from 1 Jan 2000	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)



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SI from 4 Dec 2018	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) K, Y, EU0
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 from 1 Apr 2020	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 ⑤ i
GR from 1 Oct 2016	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
NL	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 50 mg/m ³ ② 80 mg/m ³
NL from 1 Jan 2023	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³) ② 16 ppm (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) III B, H
SI from 4 Dec 2018	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) K, Y, EU0
TR	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm (50 mg/m ³)
IDLH (US) from 1 Jan 1994	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 250 ppm
Québec (CA) from 1 Apr 2022	naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	① 10 ppm ⑤ (may be absorbed through the skin)
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)



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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
Isomer mixture of C7-9-alkyl-3- (3,5-di-trans-butyl-4-hydroxyphenyl) propionate CAS No.: 125643-61-0 EC No.: 406-040-9	2.33 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
Reaction product of alkylthioalcohol and substituted phosphorus compound EC No.: 424-820-7	1.76 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
Reaction product of alkylthioalcohol and substituted phosphorus compound EC No.: 424-820-7	0.5 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate CAS No.: 93882-40-7 EC No.: 299-434-3	3.526 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate CAS No.: 93882-40-7 EC No.: 299-434-3	2 mg/kg bw/day	① DNEL worker ② Long-term - dermal, 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
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
Reaction product of alkylthioalcohol and substituted phosphorus compound EC No.: 424-820-7	0.9 µg/L	① PNEC aquatic, freshwater
Reaction product of alkylthioalcohol and substituted phosphorus compound EC No.: 424-820-7	0.09 µg/L	① PNEC aquatic, marine water
Reaction product of alkylthioalcohol and substituted phosphorus compound EC No.: 424-820-7	5 mg/L	① PNEC sewage treatment plant
Reaction product of alkylthioalcohol and substituted phosphorus compound EC No.: 424-820-7	0.159 mg/kg bw/day	① PNEC sediment, freshwater
Reaction product of alkylthioalcohol and substituted phosphorus compound EC No.: 424-820-7	0.0159 mg/kg bw/day	① PNEC sediment, marine water
4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate CAS No.: 93882-40-7 EC No.: 299-434-3	9.5 µg/L	① PNEC aquatic, freshwater
4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate CAS No.: 93882-40-7 EC No.: 299-434-3	0.95 µg/L	① PNEC aquatic, marine water



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4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate CAS No.: 93882-40-7 EC No.: 299-434-3	100 mg/L	① PNEC sewage treatment plant
4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate CAS No.: 93882-40-7 EC No.: 299-434-3	95 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
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.

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>		



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Parameter	Value	at °C	① Method ② Remark
Freezing point	not determined		
Initial boiling point and boiling range	not determined		
Decomposition temperature	not determined		
Flash point	218 °C		
Evaporation rate	not determined		
Auto-ignition temperature	not determined		
Upper/lower flammability or explosive limits	not determined		
Vapour pressure	not determined		
Vapour density	not determined		
Density	841 kg/m ³	15 °C	
Relative density	not determined		
Bulk density	not determined		
Water solubility	practically insoluble		
Partition coefficient: n-octanol/water	not determined		
Dynamic viscosity	not determined		
Kinematic viscosity	29 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.

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 (CO₂), Nitrogen oxides (NO_x),
 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

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	CAS No.: 72623-87-1	EC No.: 276-738-4
LD₅₀ oral:	≥5,000 mg/kg	
LD₅₀ dermal:	≥2,000 mg/kg	
LC₅₀ Acute inhalation toxicity (dust/mist):	≥5 mg/L	
Isomer mixture of C7-9-alkyl-3- (3,5-di-trans-butyl-4-hydroxyphenyl) propionate	CAS No.: 125643-61-0	EC No.: 406-040-9
LD₅₀ oral:	>2,000 mg/kg (Ratte)	
LD₅₀ dermal:	>2,000 mg/kg (Ratte)	
LC₅₀ Acute inhalation toxicity (dust/mist):	>5 mg/L	
Reaction product of alkylthioalcohol and substituted phosphorus compound	EC No.: 424-820-7	
LD₅₀ oral:	2,000 mg/kg (rat)	
LD₅₀ dermal:	500 mg/kg (rabbit)	



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4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate CAS No.: 93882-40-7 EC No.: 299-434-3

LD₅₀ oral: 10,000 mg/kg (rat)

LD₅₀ dermal: 3,160 mg/kg (rabbit)

Hydrocarbons, C10, aromatics, <1% naphthalene CAS No.: 1189173-42-9 EC No.: 918-811-1

LD₅₀ oral: =6,318 mg/kg (rats) OECD TG 401

LD₅₀ dermal: >2,000 mg/kg (rabbits) OECD TG 402

LC₅₀ Acute inhalation toxicity (vapour): >4.688 mg/L (rats) OECD TG 403

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 (vapour): >0.4 mg/L 4 h (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:

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

Respiratory or skin sensitisation:

Contains 4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate. 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:

Observe risk of aspiration if vomiting occurs.

For viscosity data, see section 9.

Additional information:

Frequently or prolonged contact with skin may cause dermal irritation.

11.2. Information on other hazards

Endocrine disrupting properties:

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

Other information:

No data available.

SECTION 12: Ecological information

* 12.1. Toxicity

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based CAS No.: 72623-87-1 EC No.: 276-738-4

LC₅₀: ≥100 mg/L 4 d (fish)

EC₅₀: ≥10,000 mg/L 2 d (crustaceans)

NOEC: ≥10 mg/L 21 d (crustaceans)

ErC₅₀: ≥100 mg/L 3 d (Algae/water plant)



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Isomer mixture of C7-9-alkyl-3- (3,5-di-trans-butyl-4-hydroxyphenyl) propionate		CAS No.: 125643-61-0
EC No.: 406-040-9		
EC₅₀: >100 mg/L 2 d (crustaceans, Daphnie)		
NOEC: >3 mg/L 3 d (Algae/water plant, Alge)		
Reaction product of alkylthioalcohol and substituted phosphorus compound		EC No.: 424-820-7
LC₅₀: 1.5 mg/L 4 d (fish)		
EC₅₀: 0.09 mg/L 2 d (crustaceans)		
EC₅₀: 0.31 mg/L 3 d (Algae/water plant)		
4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate		CAS No.: 93882-40-7 EC No.: 299-434-3
LC₅₀: 100 mg/L 4 d (fish)		
EC₅₀: 9.5 mg/L 2 d (crustaceans)		
NOEC: 100 mg/L 3 d (Algae/water plant)		
Hydrocarbons, C10, aromatics, <1% naphthalene		CAS No.: 1189173-42-9 EC No.: 918-811-1
LC₅₀: ≥2 - ≤5 mg/L 4 d (fish, rainbow trout)		
LC₅₀: ≥3 - ≤10 mg/L 2 d (crustaceans, Daphnia magna)		
EC₅₀: ≥1 - ≤3 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata)		
NOEC: =0.441 mg/L 28 d (fish, rainbow trout)		
NOEC: =0.771 mg/L 21 d (crustaceans, Daphnia magna)		
NOEC: ≈1 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata)		
LC₅₀: ≥2 - ≤5 mg/L 4 d (fish, Oncorhynchus mykiss (Rainbow trout))		
EC₅₀: ≥3 - ≤10 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))		
naphthalene		CAS No.: 91-20-3 EC No.: 202-049-5
LC₅₀: 6.08 mg/L 3 d (fish, Pimephales promelas)		
LC₅₀: 1.2 mg/L 4 d (fish, Oncorhynchus gorboscha)		
LC₅₀: 6.35 mg/L 2 d (fish, Pimephales promelas)		
EC₅₀: >2.96 mg/L 4 d (Algae/water plant)		
EC₅₀: 2.16 mg/L 2 d (crustaceans, Daphnia magna) OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)		
NOEC: 0.12 mg/L 40 d (fish, Oncorhynchus gorboscha)		
LOEC: 0.38 mg/L 40 d (fish, Oncorhynchus gorboscha)		

Aquatic toxicity:

Test results offset the calculated involvement of the reaction product comprised of alkyl thio-alcohol and a substituted phosphorous compound (EG 424-820-7), this substance being a tested mixture of "alkyl phosphite". Water tests for Acute and Chronic toxicities, which have been conducted with a mixture of "alkyl phosphite", result in a classification of Acute Aquatic 3. The classification of the product is then determined applying the Acute Aquatic 3 classification method and the weight percentage of the "alkyl phosphite mixture" as well as the classification and percentage by weight of the other substances with an aquatic classification present in the product.

Assessment/classification:

The substance/mixture does not fulfill the criteria of the acute aquatic toxicity according to Regulation (EC) No 1272/2008 [CLP], Annex I.

Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment.

* 12.2. Persistence and degradability

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	CAS No.: 72623-87-1	EC No.: 276-738-4
Biodegradation: Yes, slowly		

Biodegradation:

Not readily biodegradable (according to OECD criteria)

* 12.3. Bioaccumulative potential

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	CAS No.: 72623-87-1	EC No.: 276-738-4
Log K_{ow}: 6		
naphthalene	CAS No.: 91-20-3	EC No.: 202-049-5
Log K_{ow}: 3.7		
Bioconcentration factor (BCF): 168		



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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

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	CAS No.: 72623-87-1	EC No.: 276-738-4
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.		
Isomer mixture of C7-9-alkyl-3- (3,5-di-trans-butyl-4-hydroxyphenyl) propionate	CAS No.: 125643-61-0	EC No.: 406-040-9
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.		
Reaction product of alkylthioalcohol and substituted phosphorus compound	EC No.: 424-820-7	
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.		
4,4'-thiodiethylene hydrogen -2-octadecenylsuccinate	CAS No.: 93882-40-7	EC No.: 299-434-3
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.		
Hydrocarbons, C10, aromatics, <1% naphthalene	CAS No.: 1189173-42-9	EC No.: 918-811-1
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.		

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)
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



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Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
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]: This product is not assigned to a hazard category.
 Safety data sheet available on request.

15.1.2. National regulations

[DE] National regulations

Störfallverordnung (12. BlmschV)

for substances contained in the product:

This product is not assigned to a hazard category.

Technische Anleitung zur Reinhaltung der Luft (TA-Luft)

Remark:

To follow: 5.2.5

Water hazard class

WGK:

2 - obviously hazardous to water

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 (AltölV)

[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 van kankerverwekkende, mutagene en voor de voortplanting giftige stoffen (SZW)
 Algemeene beoordelingsmethodiek Water (ABM)
 Nederlandse emissierichtlijn (NeR)
 NIET-Limitatieve lijst aan voor de voortplanting giftige stoffen - Borstvoeding
 NIET-Limitatieve lijst aan voor de voortplanting giftige stoffen - Vruchtbaarheid
 NIET-Limitatieve lijst aan 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

1.3.	Details of the supplier of the safety data sheet
1.4.	Emergency telephone number
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
5.1.	Extinguishing media
7.1.	Precautions for safe handling
8.1.	Control parameters
9.1.	Information on basic physical and chemical properties
9.2.	Other information
10.6.	Hazardous decomposition products
12.1.	Toxicity
12.2.	Persistence and degradability
12.3.	Bioaccumulative potential
12.5.	Results of PBT and vPvB assessment
12.6.	Endocrine disrupting properties
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

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



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Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances hazardous to water Rigoletto (catalog substances hazardous to water)

Substance name	Type	source of supply
naphthalene CAS No.: 91-20-3 EC No.: 202-049-5	LC ₅₀ Acute inhalation toxicity (vapour); LC ₅₀ ; EC ₅₀ ; NOEC; LOEC	Source: European Chemicals Agency, http://echa.europa.eu/

* **16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]**

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

* **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.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
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.
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.