



Revision date: 11 Aug 2021 Version: 3 Print date: 11 Aug 2021

**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 DFE SAE 0W-20**

Article No.:

1111109

**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**

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):** technik@ravenol.de

**1.4. Emergency telephone number**

Abt. Technik (Produktsicherheit), 24h: +49 700 24 112 112 (Company ID: RAV) (outside USA/Canada)  
 011 49 700 24 112 112 (Company ID: RAV) (inside USA/Canada), +49 5203 9719 0 (Mo-Do 7.30 Uhr -  
 16.30 Uhr, Fr 7.30 Uhr - 13.15 Uhr) (Only available during office hours.)

**SECTION 2: Hazards identification**

\* **2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 [CLP]:

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

\* **2.2. Label elements**

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

Hazard components for labelling:

Phenol, dodecyl-, branched

**Hazard statements for environmental hazards**

H412 Harmful to aquatic life with long lasting effects.

Supplemental hazard information: -

**Precautionary statements Prevention**

P273 Avoid release to the environment.

**Precautionary statements Disposal**

P501 Dispose of contents/container to an appropriate recycling or disposal facility.

\* **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
<b>CAS No.:</b> 68037-01-4 <b>EC No.:</b> 500-183-1 <b>REACH No.:</b> 01-2119486452-34	<b>1-decene, homopolymer, hydrogenated</b> Asp. Tox. 1 (H304) <b>Danger</b>	45 - < 65 weight-%
<b>CAS No.:</b> 36878-20-3 <b>EC No.:</b> 253-249-4 <b>REACH No.:</b> 01-2119488911-28	<b>bis(nonylphenyl)amine</b> Aquatic Chronic 4 (H413)	0 - < 2 weight-%
<b>CAS No.:</b> 121158-58-5 <b>EC No.:</b> 310-154-3 <b>REACH No.:</b> 01-2119513207-49	<b>Phenol, dodecyl-, branched</b> Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Eye Dam. 1 (H318), Repr. 1B (H360F), Skin Corr. 1C (H314) <b>Danger</b> M-factor (acute): 10 M-factor (chronic): 10	0 - < 0.03 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

No known symptoms to date.

### 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



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**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

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.

**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.



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### 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

No data available

#### 8.1.2. Biological limit values

No data available

#### 8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	5 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	44.18 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, systemic effects
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	0.25 mg/kg	① DNEL worker ② Long-term - dermal, systemic effects
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	166 mg/kg	① DNEL worker ② Acute - dermal, systemic effects

Substance name	PNEC Value	① PNEC type
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	412 µg/l	① PNEC aquatic, freshwater
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	41.2 µg/l	① PNEC aquatic, marine water
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	1 mg/l	① PNEC aquatic, intermittent release
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	0.074 µg/l	① PNEC aquatic, freshwater
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	0.0074 µg/l	① PNEC aquatic, marine water



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Substance name	PNEC Value	① PNEC type
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	100 mg/l	① PNEC sewage treatment plant
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	0.226 mg/kg	① PNEC sediment, freshwater
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	0.0266 mg/kg	① PNEC sediment, marine water
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	0.37 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:** tawny

**Odour:** characteristic

**Safety relevant basis data**

parameter		at °C	Method	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	238 °C			
Evaporation rate	<i>not determined</i>			
Auto-ignition temperature	<i>not determined</i>			
Upper/lower flammability or explosive limits	<i>not determined</i>			



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parameter		at °C	Method	Remark
Vapour pressure	<i>not determined</i>			
Vapour density	<i>not determined</i>			
Density	843 kg/m <sup>3</sup>	15 °C		
Relative density	<i>not applicable</i>			
Bulk density	<i>not applicable</i>			
Water solubility	The study does not need to be conducted because the substance is known to be insoluble in water.			
Partition coefficient: n-octanol/water	<i>not applicable</i>			
Dynamic viscosity	<i>not determined</i>			
Kinematic viscosity	46 mm <sup>2</sup> /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 dioxide, Carbon monoxide, Nitrogen oxides (NOx)

**SECTION 11: Toxicological information**

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

Substance name	Toxicological information
1-decene, homopolymer, hydrogenated CAS No.: 68037-01-4 EC No.: 500-183-1	<b>LD<sub>50</sub> oral:</b> >5,000 mg/kg (Rat) <b>LD<sub>50</sub> dermal:</b> >2,000 mg/kg (Rabbit) <b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> >5 mg/l 4 h (Rat)
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	<b>LD<sub>50</sub> oral:</b> 5,000 g/m <sup>3</sup> (Rat) <b>LD<sub>50</sub> dermal:</b> >2,000 g/m <sup>3</sup> (Rabbit) <b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> >5 mg/l
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	<b>LD<sub>50</sub> oral:</b> 2,100 - 2,200 mg/kg (rat) <b>LD<sub>50</sub> dermal:</b> 15,000 mg/kg (rabbit)

**Acute oral toxicity:**

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



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**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:**

No irritant effect.

**Serious eye damage/irritation:**

No irritant effect.

**Respiratory or skin sensitisation:**

No sensitizing effects known.

**Germ cell mutagenicity:**

No indications of human germ cell mutagenicity exist.

**Carcinogenicity:**

No indication of human carcinogenicity.

**Reproductive toxicity:**

No indications of human reproductive toxicity exist.

**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.

**SECTION 12: Ecological information**

\* **12.1. Toxicity**

Substance name	Toxicological information
1-decene, homopolymer, hydrogenated CAS No.: 68037-01-4 EC No.: 500-183-1	<b>LC<sub>50</sub></b> : >750 mg/l 4 d (fish) <b>EC<sub>50</sub></b> : 190 mg/l 2 d (crustaceans, Daphnia pulex (water flea)) <b>EC<sub>50</sub></b> : >1,000 mg/l 3 d (Algae/water plant)
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	<b>LC<sub>50</sub></b> : >100 mg/l 4 d (fish) <b>EC<sub>50</sub></b> : >100 mg/l 2 d (crustaceans) <b>EC<sub>50</sub></b> : 600 mg/l 3 d (Algae/water plant)
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	<b>LC<sub>50</sub></b> : ≥40 mg/l 2 d (fish) <b>LC<sub>50</sub></b> : ≥0.58 - 0.58 mg/l 4 d (crustaceans) <b>NOEC</b> : ≥0.07 mg/l 3 d (Algae/water plant)

**Aquatic toxicity:**

Harmful to aquatic life with long lasting effects.

**Additional ecotoxicological information:**

Do not allow uncontrolled discharge of product into the environment.

**12.2. Persistence and degradability**

Substance name	Biodegradation	Remark
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	—	

**Biodegradation:**

Not readily biodegradable (according to OECD criteria)



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\* **12.3. Bioaccumulative potential**

Substance name	Log K <sub>OW</sub>	Bioconcentration factor (BCF)
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	7.6	1,584.89
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	7.14	

**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**

Substance name	Results of PBT and vPvB assessment
1-decene, homopolymer, hydrogenated CAS No.: 68037-01-4 EC No.: 500-183-1	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
bis(nonylphenyl)amine CAS No.: 36878-20-3 EC No.: 253-249-4	This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
Phenol, dodecyl-, branched CAS No.: 121158-58-5 EC No.: 310-154-3	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 information 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**

No dangerous good in sense of these transport regulations.

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.





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Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<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			
<b>14.4. Packing group</b>			
not relevant			
<b>14.5. Environmental hazards</b>			
not relevant			
<b>14.6. Special precautions for user</b>			
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:

- E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1  
 Safety data sheet available on request.

**15.1.2. National regulations**

 **[DE] National regulations**

**Störfallverordnung**

**for substances contained in the product:**

This product is not assigned to a hazard category.

**for substances possibly developing during an incident:**

Hazard categories:

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

**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)



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 **[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 vank kankerverwekkende, 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)

**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
5.1.	Extinguishing media
6.1.	Personal precautions, protective equipment and emergency procedures
7.1.	Precautions for safe handling
8.1.	Control parameters
8.2.	Exposure controls
8.3.	Additional information
9.1.	Information on basic physical and chemical properties
9.2.	Other information
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



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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)

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

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment ( <i>Aquatic Chronic 3</i> )	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

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

Hazard statements	
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very 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