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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 Professional Engine Cleaner

Article No.:

1390323

UFI:

Y3KT-GG87-RJ9W-CUG8

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 |
|--|---|--------------------------|
| Aspiration hazard (<i>Asp. Tox. 1</i>) | H304: May be fatal if swallowed and enters airways. | Calculation method. |

2.2. Label elements

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

Hazard pictograms:



GHS08

Health hazard

Signal word: Danger

Hazard components for labelling:

Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, <2% aromatics

| Hazard statements for health hazards | |
|--------------------------------------|---|
| H304 | May be fatal if swallowed and enters airways. |



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Supplemental hazard information: none

Precautionary statements

P102 Keep out of reach of children.

Precautionary statements Response

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/Emergency telephone number.

P331 Do NOT induce vomiting.

Precautionary statements Storage

P405 Store locked up.

Precautionary statements Disposal

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

2.3. Other hazards

Other adverse effects:

The mixture contains substances fulfilling the PBT and / or vPvB criteria according to REACH, Annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Additional information:

Labelling for contents according to regulation (EC) No. 648/2004 >30% aliphatic hydrocarbons

Hazardous ingredients / Hazardous impurities / Stabilisers:

| Product identifiers | Substance name Classification according to Regulation (EC) No 1272/2008 [CLP] | Concentration |
|--|--|--------------------|
| EC No.: 927-632-8 REACH No.: 01-2119457736-27 | Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, <2% aromatics Asp. Tox. 1 (H304) Danger Acute Toxicity Estimate ATE (oral) > 5,000 mg/kg ATE (dermal) > 2,000 mg/kg ATE (inhalation, dust/mist) > 5 mg/L | 45 - < 90 weight-% |
| CAS No.: 10254-57-6 EC No.: 233-593-1 REACH No.: 01-2119969655-20 | 4,4'-methylene bis(dibutyldithiocarbamate) Aquatic Chronic 4 (H413) Acute Toxicity Estimate ATE (oral) > 16,000 mg/kg ATE (dermal) > 2,000 mg/kg | 5 - < 10 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:

Never give anything by mouth to an unconscious person or a person with cramps. 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:

Remove person to fresh air and keep comfortable for breathing. When in doubt or if symptoms are observed, get medical advice.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. When in doubt or if symptoms are observed, get medical advice.

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. Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion:

Rinse mouth thoroughly with water. Observe risk of aspiration if vomiting occurs. Call a physician in any case!



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Self-protection of the first aider:

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

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

May be fatal if swallowed and enters airways.
Harmful: may cause lung damage if swallowed.

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

Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours. Aspiration hazard

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

Water mist

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

Do not inhale explosion and combustion gases. Danger of suffocation in case of accumulation in lowlying or closed rooms.

Hazardous combustion products:

Nitrogen oxides (NO_x) Carbon monoxide Carbon dioxide (CO₂)

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

5.3. Advice for firefighters

Do not inhale explosion and combustion gases. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

5.4. Additional information

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

Suppress gases/vapours/mists with water spray jet.

Fire class: B

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.

Do not breathe dust/fume/gas/mist/vapours/spray.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Avoid contact with eyes and skin.

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. Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Danger of explosion. Prevent spread over a wide area (e.g. by containment or oil barriers). Do not allow to enter into surface water or drains.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.



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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

SECTION 7: Handling and storage
SECTION 8: Exposure controls/personal protection
SECTION 13: Disposal considerations

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:

Use only in well-ventilated areas. Do not breathe gas/fumes/vapour/spray.
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:

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge.

Measures to prevent aerosol and dust generation:

See protective measures under point 7 and 8.

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. Keep locked up and out of reach of children. Keep only in original container.
Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Packaging materials:

Keep/Store only in original container.

Requirements for storage rooms and vessels:

Shafts and sewers must be protected from entry of the product. Floors should be impervious, resistant to liquids and easy to clean.
Keep only in the original container in a cool, well-ventilated place.
Do not store at temperatures above 50°C.
Take precautionary measures against static discharge.

Hints on storage assembly:

TRGS 510

Do not store together with: Oxidising agent, Pyrophoric or self-heating substances, Food and feedingstuffs

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.

7.3. Specific end use(s)

Recommendation:

Observe technical data sheet.



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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

| Limit value type (country of origin) | Substance name | ① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark |
|--------------------------------------|---|--|
| TRGS 900 (DE) from 23 Jun 2022 | 4,4'-methylene bis(dibutyldithiocarbamate) CAS No.: 10254-57-6 EC No.: 233-593-1 | ① 5 mg/m ³ ② 20 mg/m ³ ⑤ (alveolengängige Fraktion) DFG |
| TRGS 900 (DE) from 23 Jun 2022 | 4,4'-methylene bis(dibutyldithiocarbamate) CAS No.: 10254-57-6 EC No.: 233-593-1 | ① 20 mg/m ³ ② 160 mg/m ³ ⑤ (einatembare Fraktion) DFG |

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 |
|---|-----------------------|---|
| diisodecyl adipate CAS No.: 27178-16-1 EC No.: 248-299-9 | 2.8 mg/m ³ | ① DNEL worker ② Long-term - inhalation, systemic effects |
| diisodecyl adipate CAS No.: 27178-16-1 EC No.: 248-299-9 | 15 mg/kg bw/day | ① DNEL worker ② Long-term - dermal, systemic effects |

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Avoid exposure. Do not breathe gas/fumes/vapour/spray.

8.2.2. Personal protection equipment



Eye/face protection:

During transfer: Eye glasses with side protection
 DIN-/EN-Norms EN 166

Skin protection:

Hand protection

Suitable material: NBR (Nitrile rubber), FKM (fluoro rubber)

Thickness of the glove material: ≥ 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.

Tested protective gloves must be worn: EN ISO 374

Suitable protective clothing: Protective clothing solvent-resistant like: EN 465

Respiratory protection:

Usually no personal respirative protection necessary.

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Other protection measures:

Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid

Colour: light yellow

Odour: characteristic

Safety relevant basis data

| Parameter | Value | at °C | ① Method ② Remark |
|--|--------------------------|-------|----------------------|
| pH | <i>not applicable</i> | | |
| Melting point | <i>No data available</i> | | |
| Freezing point | <i>No data available</i> | | |
| Initial boiling point and boiling range | <i>No data available</i> | | |
| Flash point | 132 °C | | |
| Evaporation rate | <i>No data available</i> | | |
| Auto-ignition temperature | <i>No data available</i> | | |
| Upper/lower flammability or explosive limits | <i>No data available</i> | | |
| Vapour pressure | <i>No data available</i> | | |
| Vapour density | <i>No data available</i> | | |
| Density | 850 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>No data available</i> | | |
| Kinematic viscosity | 5 mm ² /s | 40 °C | |

9.2. Other information

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.

10.5. Incompatible materials

Oxidizing agent, Pyrophoric or self-heating substances
 Strong acid
 Alkali (lye), concentrated

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.

Do not inhale explosion and combustion gases. Danger of suffocation in case of accumulation in lowlying or closed rooms.

Further information

Do not mix with other chemicals.



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SECTION 11: Toxicological information

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

| | |
|--|---------------------------------------|
| Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, <2% aromatics | EC No.: 927-632-8 |
| LD₅₀ oral: >5,000 mg/kg (Rat) | |
| LD₅₀ dermal: >2,000 mg/kg (Rabbit) | |
| LC₅₀ Acute inhalation toxicity (dust/mist): >5 mg/L | |
| 4,4'-methylene bis(dibutyldithiocarbamate) | CAS No.: 10254-57-6 EC No.: 233-593-1 |
| LD₅₀ oral: >16,000 mg/kg (Rat) | |
| LD₅₀ dermal: >2,000 mg/kg (Rabbit) | |

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:

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:

May be fatal if swallowed and enters airways.

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 information available.

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--|---------------------------------------|
| Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, <2% aromatics | EC No.: 927-632-8 |
| LC₅₀: >10,000 mg/L 4 d (Oncorhynchus mykiss (Rainbow trout)) | |
| 4,4'-methylene bis(dibutyldithiocarbamate) | CAS No.: 10254-57-6 EC No.: 233-593-1 |
| LC₅₀: >0.06 mg/L 4 d (fish) | |
| EC₅₀: >0.052 mg/L 2 d (crustaceans) | |
| EC₅₀: >0.0325 mg/L 3 d (Algae/water plant) | |

Assessment/classification:

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



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Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment.

12.2. Persistence and degradability

Biodegradation:

Not readily biodegradable (according to OECD criteria)

12.3. Bioaccumulative potential

| |
|---|
| 4,4'-methylene bis(dibutyldithiocarbamate) CAS No.: 10254-57-6 EC No.: 233-593-1 |
| Log K_{ow} : 8.42 |

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

| |
|---|
| Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, <2% aromatics EC No.: 927-632-8 |
| Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII. |
| 4,4'-methylene bis(dibutyldithiocarbamate) CAS No.: 10254-57-6 EC No.: 233-593-1 |
| Results of PBT and vPvB assessment: PBT-substance. |

The mixture contains substances fulfilling the PBT and / or 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 Directive 2008/98/EC (Waste Framework Directive)

| | |
|------|---|
| HP 5 | Specific Target Organ Toxicity (STOT)/Aspiration Toxicity |
|------|---|

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. |



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| Land transport (ADR/RID) | Inland waterway craft (ADN) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|--|--|--|--|
| 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

No transport as bulk according to IBC Code.

SECTION 15: Regulatory information

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

15.1.1. EU legislation

Restrictions on use:

Use restriction according to REACH annex XVII, no.: 3, 75

Other regulations (EU):

This product is not assigned to a hazard category.

Labelling for contents according to regulation (EC) No. 648/2004 >30% aliphatic hydrocarbons

15.1.2. National regulations

 **[DE] National regulations**

Restrictions of occupation

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

Annex Chemikalien-Verbotsverordnung (ChemVerbotsV)

Not applicable

Störfallverordnung (12. BImSchV)

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).

Technische Regeln für Gefahrstoffe

Minimum protective measures according to TRGS 500

Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)

To follow: Berufsgenossenschaftliche Informationen (DGUV-Informationen) 868

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

 **[DK] National regulations**

Other regulations, restrictions and prohibition regulations

[\P:ca19682f-639a-41b3-8f47-6f286be6adf7\](#)

 **[FR] National regulations**

Other regulations, restrictions and prohibition regulations

[\P:bcb06c4e-46f7-4a11-a0e6-1fd8cb65f728\](#)



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[NL] National regulations

Other regulations, restrictions and prohibition regulations

[\P:06b48189-0427-4de8-a01b-d5a2d680ad4e\](#)

[CH] National regulations

Other regulations, restrictions and prohibition regulations

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

[SK] National regulations

Other regulations, restrictions and prohibition regulations

Zákon č. 67/2010 Z.z., o podmienkach uvedenia chemických látok a chemických zmesí na trh a o zmene a doplnení niektorých zákonov (chemický zákon).
Zákon č. 124/2006 Z. z. o bezpečnosti a ochrane zdravia pri práci a o zmene a doplnení niektorých zákonov.
Zákon NR SR č. 355/2007 Z.z., o ochrane, podpore a rozvoji verejného zdravia a o zmene a doplnení niektorých zákonov, v znení neskorších predpisov.
Nariadenie vlády SR 471/2011 Z.z., ktorým sa mení nariadenie vlády Slovenskej republiky č. 355/2006 Z. z. o ochrane zamestnancov pred rizikami súvisiacimi s expozíciou chemickým faktorom pri práci, Príloha č.1.
Zákon č. 79/2015 Z.z. o odpadoch v znení neskorších predpisov.
Vyhláška MV SR č. 96/2004 Z.z., ktorou sa ustanovujú zásady protipožiarnej bezpečnosti pri manipulácii a skladovaní horľavých kvapalín, ťažkých vykurovacích olejov a rastlinných a živočíšnych tukov a olejov.
Zákon NR SR č. 137/2010 Z.z. o ovzduší v znení neskorších predpisov.
Zákon č. 319/2013 Z.z. o pôsobnosti orgánov štátnej správy pre sprístupňovanie biocídnych výrobkov na trh a ich používanie a o zmene a doplnení niektorých zákonov (biocídny zákon).

15.2. Chemical Safety Assessment

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

15.3. Additional information

Tactile warning according to EN/ISO 11683. Child-resistant fastenings (EN/862/ISO 8317).

SECTION 16: Other information

16.1. Indication of changes

Not applicable

16.2. Abbreviations and acronyms

| | |
|------------------|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| CAS | Chemical Abstracts Service |
| CLP | Classification, Labelling and Packaging |
| DIN | German Institute for Standardization / German Industrial Standard |
| DNEL | derived no-effect level |
| EC ₅₀ | Effective Concentration 50% |
| EN | European Standard |
| EWC | European Waste Catalogue |
| IBC | Intermediate Bulk Container |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Standards Organisation |
| KG | body weight |
| LC ₅₀ | Lethal (fatal) Concentration 50% |
| LD ₅₀ | Lethal (fatal) Dose 50% |
| NFPA | National Fire Protection Association |
| OECD | Organisation for Economic Cooperation and Development |
| PBT | persistent and bioaccumulative and toxic |
| PNEC | Predicted No Effect Concentration |
| REACH | Registration, Evaluation and Authorization of Chemicals |
| RID | Dangerous goods regulations for transport by rail |



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TRGS Technische Regeln für Gefahrstoffe
UN United Nations

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
See overview table at www.euphrac.eu

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
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 |
|--|---|--------------------------|
| Aspiration hazard (<i>Asp. Tox. 1</i>) | H304: May be fatal if swallowed and enters airways. | Calculation method. |

16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15

| Hazard statements | |
|-------------------|---|
| H304 | May be fatal if swallowed and enters airways. |
| 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.