DIOSOL-3

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

1.1. Product identifier
Trade name/designation:

DIOSOL-3

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture:
Industrial uses

1.3. Details of the supplier of the safety data sheet
Supplier (manufacturer/importer/only representative/downstream user/distributor):
DIOP GmbH & Co. KG
Dieselstr. 5-6
61191 Rosbach
Telephone: 06003/814-0
E-mail: info@diopgmbh.com

1.4. Emergency telephone number
Notfallauskunft: The Emergency telephone is available during European time zone office time between 8 am and 5 pm on working days., 06003/814-0 (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
No data available

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Signal word: Warning
Additional information:
To avoid risks to human health and the environment, comply with the instructions for use.

2.3. Other hazards
Adverse human health effects and symptoms:
Risk of serious damage to eyes. Harmful if swallowed.

SECTION 3: Composition / information on ingredients

3.2. Mixtures
Description:
Aqueous solution of Hydrogen peroxide, stabilized

| Hazardous ingredients / Hazardous impurities / Stabilisers: |
|---|---|---|---|
| Substance name | Classification according to Regulation (EC) No 1272/2008 [CLP] | Concentration |
| hydrogen peroxide | Skin Corr. 1A, STOT SE 3, Ox. Liq. 1, Acute Tox. 4, Aquatic Chronic 3 | 0 – 8 % |
| CAS No.: 7722-84-1 | | |
| EC No.: 231-765-0 | | |
| REACH No.: 01-2119485845-22 | | |

Full text of H- and EUH-phrases: see section 16.
SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours. Immediately remove any contaminated clothing, shoes or stockings.

Following inhalation:
Remove casualty to fresh air and keep warm and at rest.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing.

After eye contact:
If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist.

After ingestion:
Let water be drunken in little sips (dilution effect).

4.2. Most important symptoms and effects, both acute and delayed
Irritating to eyes and skin.

4.3. Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Product is non inflamable Carbon dioxide (CO2), Water spray jet, alcohol resistant foam

5.2. Special hazards arising from the substance or mixture
In case of fire may be liberated: Oxygen Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

5.3. Advice for firefighters
In case of fire: Wear self-contained breathing apparatus.

5.4. Additional information
Co-ordinate fire-fighting measures to the fire surroundings. Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:
Remove persons to safety. Wear personal protection equipment. Do not breathe vapour/aerosol. Provide adequate ventilation.

6.1.2. For emergency responders
No data available

6.2. Environmental precautions
Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up
For cleaning up:
Cover drains. Pump away bigger amounts. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Wash with plenty of water. Spilled product must never be returned to the original container for recycling. Provide adequate ventilation.

6.4. Reference to other sections
No data available
6.5. Additional information
No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures
Advices on safe handling:
Notice the directions for use on the label. Avoid: generation/formation of aerosols. Put lids on containers immediately after use. When using do not eat, drink or smoke. Wash hands and face before breaks and after work and take a shower if necessary. Immediately remove any contaminated clothing, shoes or stockings. Use personal protection equipment.

Fire prevent measures:
Danger of bursting container. Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:
Keep away from heat. Protect against direct sunlight. Store dark. Do not keep the container sealed.
Suitable material for Container: Polyethylene Polypropylen

Hints on storage assembly:
Do not store together with: Base, Combustible substance
Storage class: 5.1B – Oxidising substances

Further information on storage conditions:
Store dark. Protect against direct sunlight. Keep away from heat. Keep in a cool, well-ventilated place.

7.3. Specific end use(s)
Recommendation:
No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

<table>
<thead>
<tr>
<th>Limit value type (country of origin)</th>
<th>Substance name</th>
<th>① long-term occupational exposure limit value</th>
<th>② short-term occupational exposure limit value</th>
<th>③ Instantaneous value</th>
<th>④ Monitoring and observation processes</th>
<th>⑤ Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFG (DE) hydrogen peroxide CAS No.:</td>
<td>7722-84-1</td>
<td>① 0.5 ppm (0.71 mg/m³)</td>
<td>② 0.5 ppm (0.71 mg/m³)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.1.2. Biological limit values
No data available

8.1.3. DNEL-/PNEC-values

<table>
<thead>
<tr>
<th>Substance name</th>
<th>DNEL value</th>
<th>① DNEL type</th>
<th>② Exposure route</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen peroxide CAS No.: 7722-84-1</td>
<td>3 mg/m³</td>
<td>① DNEL worker</td>
<td>② DNEL acute inhalative (local)</td>
</tr>
<tr>
<td>hydrogen peroxide CAS No.: 7722-84-1</td>
<td>1.93 mg/m³</td>
<td>① DNEL Consumer</td>
<td>② DNEL acute inhalative (local)</td>
</tr>
<tr>
<td>hydrogen peroxide CAS No.: 7722-84-1</td>
<td>1.4 mg/m³</td>
<td>① DNEL worker</td>
<td>② DNEL long-term inhalative (local)</td>
</tr>
</tbody>
</table>
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8.2. Exposure controls

8.2.1. Appropriate engineering controls

No data available

8.2.2. Personal protection equipment

Eye/face protection:
Tightly sealed safety glasses. oder Face protection shield

Skin protection:
Suitable material: Latex, NBR (Nitrile rubber) Butyl caoutchouc (butyl rubber)
Thickness of the glove material: 0,65 mm; 0,4 mm; 0,7 mm
Breakthrough time (maximum wearing time): > 8h

Respiratory protection:
Respiratory protection necessary at: vapour / Aerosol
Suitable respiratory protection apparatus: NO-P3

Other protection measures:
Protective clothing: Chemical resistant safety shoes Chemical protection clothing acid-resistant
General health and safety measures: When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. Take off immediately all contaminated clothing. Do not breathe gas/vapour/aerosol. Avoid contact with skin. Avoid contact with eyes. 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.

8.2.3. Environmental exposure controls

Avoid release to the environment. Do not allow to enter into surface water or drains.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance
Physical state: Liquid
Colour: colourless
Odour: stinging
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006 (REACH)
Revision date: 15-Aug-2017
Print date: 15-Aug-2017
Version: 1
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Safety relevant basis data

<table>
<thead>
<tr>
<th>parameter</th>
<th>at °C</th>
<th>Method</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>2 - 5</td>
<td>20 °C</td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Freezing point</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>101 °C</td>
<td></td>
<td>pressure: 1013 mbar</td>
</tr>
<tr>
<td>Decomposition temperature (°C):</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Ignition temperature in °C</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour density</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Relative density</td>
<td>1 - 1.1 g/cm³</td>
<td>20 °C</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Water solubility (g/L)</td>
<td></td>
<td></td>
<td>completely misc</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td></td>
<td></td>
<td>not determined</td>
</tr>
</tbody>
</table>

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
Oxidizing agent/oxidizing, Materials to avoid: Heavy metals, Alkali (lye)

10.2. Chemical stability
Store dark. Keep away from heat. Heating. No decomposition on normal use

10.3. Possibility of hazardous reactions
Exothermic, self accelerating decomposition reaction develops oxygen gas. Containers may burst due to rising gas pressure

10.4. Conditions to avoid
Heating. Store dark.

10.5. Incompatible materials
Heavy metals, Alkali (lye)

10.6. Hazardous decomposition products
Danger of bursting container. No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Toxicological information</th>
</tr>
</thead>
<tbody>
<tr>
<td>7722-84-1</td>
<td>hydrogen peroxide</td>
<td>LD$_{50}$ oral: 376 mg/kg (Rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD$_{50}$ dermal: 3,000 mg/kg (Rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC$_{50}$ inhalative: 2 mg/l 4 h (Rat)</td>
</tr>
</tbody>
</table>

Acute oral toxicity: Harmful if swallowed.
Acute inhalation toxicity: Irritation to respiratory tract
DIOSOL-3

Skin corrosion/irritation:
Irritant effect on the skin: mild irritant.

Serious eye damage/irritation:
Irritant effect on the eye: mild irritant.

Respiratory or skin sensitisation:
Based on available data, the classification criteria are not met.

Germ cell mutagenicity:
Based on available data, the classification criteria are not met.

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

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

STOT-single exposure:
Based on available data, the classification criteria are not met.

STOT-repeated exposure:
Based on available data, the classification criteria are not met.

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

Additional information:
Other information: White spots on skin vanish within a few hours.

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Toxicological information</th>
</tr>
</thead>
<tbody>
<tr>
<td>7722-84-1</td>
<td>hydrogen peroxide</td>
<td>( LC_{50} ): 16.4 mg/l 4 d (Pimephales promelas (fathead minnow))</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( LC_{50} ): 37.4 mg/l 4 d (Ictalurus punctatus (Channel Catfish))</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( LC_{50} ): 24.4 mg/l 4 d (Daphnia pulex (water flea))</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( EC_{50} ): 2.4 mg/l 2 d (Daphnia pulex (water flea))</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( EC_{50} ): 7.7 mg/l (Daphnia magna (Big water flea))</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( EC_{50} ): 2.5 mg/l 3 d (Chlorella vulgaris)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( EC_{50} ): 13.2 mg/l 2 d</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( EC_{50} ): 3.36 mg/l 3 d</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( EC_{50} ): 5.74 mg/l 4 d</td>
</tr>
</tbody>
</table>
Aquatic toxicity:
LC50 Fisch (96 Stunden)
Minimalwert: 22 mg/l
Maximalwert: 26,7 mg/l
Medianwert: 24,4 mg/l
Studienanzahl: 2

EC50 Krustentiere (48 Stunden)
Minimalwert: 2,32 mg/l
Maximalwert: 24 mg/l
Medianwert: 13,2 mg/l
Studienanzahl: 2

EC50 Algen ( 72 Stunden)
Minimalwert: 0,71 mg/l
Maximalwert: 5,81 mg/l
Medianwert: 3,36 mg/l
Studienanzahl: 6

EC50 Algen ( 96 Stunden)
Minimalwert: 5,38 mg/l
Maximalwert: 6,49 mg/l
Medianwert: 5,74 mg/l
Studienanzahl: 3

Additional ecotoxicological information:
Referenzen:

12.2. Persistence and degradability
Additional information:
Further ecological information: In soil and waters rapid decomposition to water and oxygen occurs. Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential
Accumulation / Evaluation:
Additional information: No data available

12.4. Mobility in soil
In soil and waters rapid decomposition to water and oxygen occurs.

12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance name</th>
<th>Results of PBT and vPvB assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7722-84-1</td>
<td>hydrogen peroxide</td>
<td>—</td>
</tr>
</tbody>
</table>

No data available
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12.6. Other adverse effects
Chemical oxygen demand (COD): 13 mg/g Verdünnung 1 : 1000, Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Dilute with plenty of water. Do not dispose of as domestic waste. Small amounts (several grams) can be given to the sewage system after dilution 1:100 with water. Bigger amounts must be treated as special waste. Do not empty into drains.

Waste treatment options
Appropriate disposal / Package:
Wash with water and give to pastic recycling.

13.2. Additional information
No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant

14.2. UN proper shipping name
not relevant

14.3. Transport hazard class(es)
not relevant

14.4. Packing group
not relevant

14.5. Environmental hazards
not relevant

14.6. Special precautions for user
not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Additional information:
Keep away from food, drink and animal feedingstuffs.

SECTION 15: Regulatory information

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

15.1.1. EU legislation
No data available

15.1.2. National regulations

[DE] National regulations

Water hazard class (WGK)
WGK:
1 - schwach wassergefährdend

15.2. Chemical Safety Assessment
No data available
15.3. Additional information
No data available

SECTION 16: Other information

16.1. Indication of changes
No data available

16.2. Abbreviations and acronyms
No data available

16.3. Key literature references and sources for data
No data available

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

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

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H271</td>
<td>May cause fire or explosion; strong oxidiser.</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H332</td>
<td>Harmful if inhaled.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

16.6. Training advice
No data available

16.7. Additional information
The data presented here correspond to the present state of our knowledge and experience and are intended to describe our product with respect to possible safety demands. We imply with this however no guarantee of properties or description of qualities.