Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

Coolant Ready Mix RAF11

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture:
Anti-freeze

Uses advised against:
No information available at present.

1.3 Details of the supplier of the safety data sheet

LIQUI MOLY GmbH
Jerg-Wieland-Str. 4
89081 Ulm-Lehr
Tel.: (+49) 0731-1420-0
Fax: (+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:
—

Telephone number of the company in case of emergencies:
+49 (0) 700 / 24 112 112 (LMR)
+1 872 5888271 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Hazard class</th>
<th>Hazard category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT RE</td>
<td>2</td>
<td>H373-May cause damage to organs through prolonged or repeated exposure (kidneys).</td>
</tr>
</tbody>
</table>

2.2 Label elements

Labeling according to Regulation (EC) 1272/2008 (CLP)
Warning

H373-May cause damage to organs through prolonged or repeated exposure (kidneys).

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children.
P260-Do not breathe vapours or spray.
P314-Get medical advice / attention if you feel unwell.
P501-Dispose of contents / container to an approved waste disposal facility.

Ethanediol

2.3 Other hazards
The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Substance</th>
<th>Registration number (REACH)</th>
<th>Index</th>
<th>EINECS, ELINCS, NLP, REACH-IT List-No.</th>
<th>CAS</th>
<th>content %</th>
<th>Classification according to Regulation (EC) 1272/2008 (CLP), M-factors</th>
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</thead>
<tbody>
<tr>
<td>Ethanediol</td>
<td>01-2119456816-28-XXXX</td>
<td>603-027-00-1</td>
<td>203-473-3</td>
<td>107-21-1</td>
<td>20-40</td>
<td>Acute Tox. 4, H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STOT RE 2, H373 (kidneys)</td>
</tr>
</tbody>
</table>

Disodium tetraborate pentahydrate

<table>
<thead>
<tr>
<th>Substance</th>
<th>Registration number (REACH)</th>
<th>Index</th>
<th>EINECS, ELINCS, NLP, REACH-IT List-No.</th>
<th>CAS</th>
<th>content %</th>
<th>Classification according to Regulation (EC) 1272/2008 (CLP), M-factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>01-2119490790-32-XXXX</td>
<td>005-011-02-9</td>
<td>215-540-4</td>
<td>12179-04-3</td>
<td>0,1-&lt;0,5</td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Repr. 1B, H360FD</td>
</tr>
</tbody>
</table>

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
The substances named in this section are given with their actual, appropriate classification!
For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures
First-aiders should ensure they are protected!
Never pour anything into the mouth of an unconscious person!

Inhalation
Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.
If the person is unconscious, place in a stable side position and consult a doctor.

Skin contact
Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

**Eye contact**
Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

**Ingestion**
Rinse the mouth thoroughly with water.
Do not induce vomiting - give copious water to drink. Consult doctor immediately.

### 4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

- Irritation of the eyes
- Skin resorption
- Effects/damages the central nervous system
- Unconsciousness
- Kidney damage

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

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

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media
- CO2
- Extinguishing powder
- Water jet spray
- Large fire:
  - Water jet spray
  - Alcohol resistant foam

#### Unsuitable extinguishing media
- None known

### 5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:
- Oxides of carbon
- Toxic gases

### 5.3 Advice for firefighters

- For personal protective equipment see Section 8.
- In case of fire and/or explosion do not breathe fumes.
- Protective respirator with independent air supply.
- According to size of fire
  - Full protection, if necessary.
  - Cool container at risk with water.
- Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

- In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
- Ensure sufficient ventilation, remove sources of ignition.
- Avoid dust formation with solid or powder products.
- Leave the danger zone if possible, use existing emergency plans if necessary.
- Remove possible causes of ignition - do not smoke.
- Ensure sufficient supply of air.
- Avoid contact with eyes or skin.
- If applicable, caution - risk of slipping.

#### 6.1.2 For emergency responders

- See section 8 for suitable protective equipment and material specifications.

### 6.2 Environmental precautions
If leakage occurs, dam up.
Resolve leaks if this possible without risk.
Prevent surface and ground-water infiltration, as well as ground penetration.
Prevent from entering drainage system.
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up
Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.

6.4 Reference to other sections
For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations
Ensure good ventilation.
Avoid aerosol formation.
Keep away from sources of ignition - Do not smoke.
Avoid contact with eyes or skin.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace
General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities
Keep out of access to unauthorised individuals.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Protect from direct sunlight and warming.
Under all circumstances prevent penetration into the soil.

7.3 Specific end use(s)
No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Ethanol</th>
<th>Content %: 20-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 10 mg/m³ (particulate), 52 mg/m³ (vapour)</td>
<td>WEL-STEL: 104 mg/m³ (vapour) (WEL), 40 ppm (104 mg/m³) (EU)</td>
<td></td>
</tr>
</tbody>
</table>

Monitoring procedures:
- Draeger - Ethylene Glycol 10 (5) (81 01 351)
- Compur - KITA-232 SA (502 342)
- Compur - KITA-232 SB (550 267)
- NIOSH 5500 (ETHYLENE GLYCOL) - 1993
- NIOSH 5523 (GLYCOLS) - 1996
- OSHA PV2024 (Ethylene glycol) - 1999 - EU project BC/CEN/ENTR/000/2002-16 card
- Draeger - Alcohol 100/ia (CH 29 701)

BMGV: ---
Other information: Sk (particulate, vapour)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Disodium tetraborate pentahydrate</th>
<th>Content %: 0.1-&lt;0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 1 mg/m³</td>
<td>WEL-STEL: ---</td>
<td></td>
</tr>
</tbody>
</table>

Monitoring procedures: ---

BMGV: ---
Other information: ---
# Ethanol

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>PNEC</td>
<td>1.53</td>
<td>mg/kg</td>
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</tr>
<tr>
<td></td>
<td>Environment - soil</td>
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<td>PNEC</td>
<td>199.5</td>
<td>mg/l</td>
<td></td>
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<tr>
<td></td>
<td>Environment - sewage treatment plant</td>
<td></td>
<td>PNEC</td>
<td>1</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - marine</td>
<td></td>
<td>PNEC</td>
<td>3.7</td>
<td>mg/kg</td>
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<tr>
<td></td>
<td>Environment - sediment, marine</td>
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<td>PNEC</td>
<td>37</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sediment, freshwater</td>
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<td>PNEC</td>
<td>18.1</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - freshwater</td>
<td></td>
<td>PNEC</td>
<td>10</td>
<td>mg/l</td>
<td></td>
</tr>
</tbody>
</table>

**Consumer**

- Human - inhalation: Short term, systemic effects
  - DNEL: 7 mg/m³

- Human - dermal: Long term, systemic effects
  - DNEL: 53 mg/kg bw/day

**Workers / employees**

- Human - inhalation: Short term, systemic effects
  - DNEL: 35 mg/m³

- Human - dermal: Long term, systemic effects
  - DNEL: 106 mg/kg bw/day

---

# Disodium tetraborate pentahydrate

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>PNEC</td>
<td>13.7</td>
<td>mg/l</td>
<td></td>
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<tr>
<td></td>
<td>Environment - sporadic (intermittent) release</td>
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<td>PNEC</td>
<td>2.9</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - freshwater</td>
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<td>PNEC</td>
<td>2.9</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - marine</td>
<td></td>
<td>PNEC</td>
<td>10</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment - sewage treatment plant</td>
<td></td>
<td>PNEC</td>
<td>5.7</td>
<td>mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

**Consumer**

- Human - oral: Long term, systemic effects
  - DNEL: 1.15 mg/kg bw/day

- Human - inhalation: Long term, systemic effects
  - DNEL: 4.9 mg/m³

- Human - dermal: Long term, systemic effects
  - DNEL: 23.18 mg/kg bw/day

- Human - oral: Short term, systemic effects
  - DNEL: 0.79 mg/kg

- Human - inhalation: Short term, local effects
  - DNEL: 17.04 mg/l

- Human - inhalation: Long term, local effects
  - DNEL: 17.04 mg/m³

- Human - oral: Short term, systemic effects
  - DNEL: 1.15 mg/kg bw/day

**Workers / employees**

- Human - inhalation: Long term, systemic effects
  - DNEL: 9.8 mg/m³

- Human - dermal: Long term, systemic effects
  - DNEL: 31.6 mg/kg bw/day

- Human - inhalation: Short term, local effects
  - DNEL: 17.04 mg/m³

- Human - inhalation: Long term, local effects
  - DNEL: 17.04 mg/m³

---

**Note:**

- WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
- (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0.002 mg Cd/g creatinine in urine (Directive 2004/37/CE).
- EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).

---

**Other information:** Sen = Capable of causing occupational asthma. Sk = Can be absorbed through
8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction. If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn. Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques. These are specified by e.g. EN 14042. EN 14042 “Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents”.

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable. Wash hands before breaks and at end of work. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles (EN 166) with side protection, with danger of splashes.

Skin protection - Hand protection:
Chemical resistant protective gloves (EN ISO 374).
If applicable
Protective nitrile gloves (EN ISO 374).
Protective Neoprene® / polychloroprene gloves (EN ISO 374).
Protective PVC gloves (EN ISO 374).
Minimum layer thickness in mm:
0,5
Permeation time (penetration time) in minutes:
>= 480
The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions. The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
Normally not necessary.
If OES or MEL is exceeded.
Filter A2 P2 (EN 14387), code colour brown, white
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents. Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account. Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use. The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: Liquid
Colour: Cyan
Odour: Mild
Melting point/freezing point: There is no information available on this parameter.
Boiling point or initial boiling point and boiling range: There is no information available on this parameter.
Flammability: Combustible.
Lower explosion limit: There is no information available on this parameter.
Upper explosion limit: There is no information available on this parameter.
Flash point: There is no information available on this parameter.
Auto-ignition temperature: There is no information available on this parameter.
Decomposition temperature: There is no information available on this parameter.
pH: There is no information available on this parameter.
Kinematic viscosity: There is no information available on this parameter.
Solubility: Soluble
Partition coefficient n-octanol/water (log value): Does not apply to mixtures.
Vapour pressure: There is no information available on this parameter.
Density and/or relative density: There is no information available on this parameter.
Relative vapour density: There is no information available on this parameter.
Particle characteristics: Does not apply to liquids.

9.2 Other information

Explosives: Product is not explosive.
Oxidising liquids: No
Bulk density: n.a.

SECTION 10: Stability and reactivity

10.1 Reactivity
The product has not been tested.

10.2 Chemical stability
Stable with proper storage and handling.

10.3 Possibility of hazardous reactions
No dangerous reactions are known.

10.4 Conditions to avoid
Strong heat

10.5 Incompatible materials
Avoid contact with strong oxidizing agents.
Avoid contact with strong acids.

10.6 Hazardous decomposition products
See also section 5.2
No decomposition when used as directed.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Possibly more information on health effects, see Section 2.1 (classification).

<table>
<thead>
<tr>
<th>Coolant Ready Mix RAF11</th>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acute toxicity, by oral route:</td>
<td>ATE</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td></td>
<td>calculated value</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute toxicity, by dermal route:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute toxicity, by inhalation:</td>
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<td></td>
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<td>n.d.a.</td>
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<tr>
<td></td>
<td>Skin corrosion/irritation:</td>
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<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Germ cell mutagenicity:</td>
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<td>n.d.a.</td>
<td></td>
</tr>
</tbody>
</table>
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 01.11.2021 / 0007
Replacing version dated / version: 02.08.2019 / 0006
Valid from: 01.11.2021
PDF print date: 01.11.2021
Coolant Ready Mix RAF11

Carcinogenicity: n.d.a.
Reproductive toxicity: n.d.a.
Aspiration hazard: n.d.a.
Symptoms: n.d.a.

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>1600</td>
<td>mg/kg</td>
<td>Cat</td>
<td></td>
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<tr>
<td></td>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>9530</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Not irritant</td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Slightly irritant</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Human being</td>
<td>(Patch-Test)</td>
<td>Negative</td>
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<tr>
<td>Germ cell mutagenicity:</td>
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<td></td>
<td></td>
<td></td>
<td>OECD 471 (Bacterial Reverse Mutation Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ataxia, breathing difficulties, unconsciousness, cramps, fatigue</td>
</tr>
</tbody>
</table>

Disodium tetraborate pentahydrate

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
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<td>Acute toxicity, by oral route:</td>
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<td>Rat</td>
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<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td></td>
<td></td>
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<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>&gt;2 mg/l/4h</td>
<td></td>
<td>Rat</td>
<td>OECD 403 (Acute Inhalation Toxicity)</td>
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<tr>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Not irritant, Analogous conclusion</td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
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<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 405 (Acute Eye Irritation/Corrosion)</td>
<td>Mild irritant</td>
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<tr>
<td>Respiratory or skin sensitisation:</td>
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<td></td>
<td></td>
<td>Guinea pig</td>
<td>OECD 406 (Skin Sensitisation)</td>
<td>Not sensitising</td>
</tr>
<tr>
<td>Carcinogenicity:</td>
<td></td>
<td></td>
<td></td>
<td>Mouse</td>
<td>OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)</td>
<td>No indications of such an effect., Analogous conclusion</td>
</tr>
<tr>
<td>Reproductive toxicity:</td>
<td></td>
<td></td>
<td></td>
<td>Rat</td>
<td>Repr. 1B, Analogous conclusion</td>
<td></td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>breathing difficulties, headaches, gastrointestinal disturbances, dizziness, nausea</td>
<td></td>
</tr>
</tbody>
</table>

11.2. Information on other hazards

<table>
<thead>
<tr>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coolant Ready Mix RAF11</td>
<td>Endocrine disrupting properties:</td>
<td></td>
<td></td>
<td></td>
<td>Does not apply to mixtures.</td>
<td></td>
</tr>
</tbody>
</table>

Endocrine disrupting properties:
**SECTION 12: Ecological information**

Possibly more information on environmental effects, see Section 2.1 (classification).

<table>
<thead>
<tr>
<th>Coolant Ready Mix RAF11</th>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.5. Results of PBT and vPvB assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td></td>
<td>12.6. Endocrine disrupting properties:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Does not apply to mixtures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.7. Other adverse effects:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No information available on other adverse effects on the environment.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethanol</th>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.2. Persistence and degradability:</td>
<td></td>
<td>28d</td>
<td>56</td>
<td>%</td>
<td></td>
<td>OECD 301 C (Ready Biodegradability - Modified MITI Test (I))</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.3. Bioaccumulative potential:</td>
<td>Log Pow</td>
<td>-1.36</td>
<td></td>
<td></td>
<td></td>
<td>Not to be expected</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.1. Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>&gt;10000</td>
<td>mg/l</td>
<td>Pimephales promelas</td>
<td>IUCLID Chem. Data Sheet (ESIS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.1. Toxicity to daphnia:</td>
<td>EC50</td>
<td>48h</td>
<td>41100</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td>IUCLID Chem. Data Sheet (ESIS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.1. Toxicity to algae:</td>
<td>EC50</td>
<td>96h</td>
<td>6500-7500</td>
<td>mg/l</td>
<td>Pseudokirchneriella subcapitata</td>
<td>IUCLID Chem. Data Sheet (ESIS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toxicity to bacteria:</td>
<td>EC50</td>
<td>16h</td>
<td>&gt;10000</td>
<td>mg/l</td>
<td>Pseudomonas putida</td>
<td>IUCLID Chem. Data Sheet (ESIS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other information:</td>
<td>BOD5</td>
<td></td>
<td>0.78</td>
<td>g/g</td>
<td></td>
<td>IUCLID</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other information:</td>
<td>COD</td>
<td></td>
<td>1.19</td>
<td>g/g</td>
<td></td>
<td>IUCLID</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other information:</td>
<td>THOD</td>
<td></td>
<td>1.29</td>
<td>g/g</td>
<td></td>
<td>IUCLID</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disodium tetraborate pentahydrate</th>
<th>Toxicity / effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.2. Persistence and degradability:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Inorganic products cannot be eliminated from water through biological purification methods.</td>
</tr>
<tr>
<td>12.1. Toxicity to fish:</td>
<td>NOEC/NOEL</td>
<td>34d</td>
<td>6.4</td>
<td>mg/l</td>
<td>Brachydanio rerio</td>
<td>IUCLID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity to fish:</td>
<td>NOEC/NOEL</td>
<td>96h</td>
<td>13</td>
<td>mg/l</td>
<td>Brachydanio rerio</td>
<td>IUCLID</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12.1 Toxicity to fish:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Time</th>
<th>Value 2</th>
<th>Species</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 96h</td>
<td>74 mg/l</td>
<td></td>
<td></td>
<td>Limanda limanda</td>
<td>Analogous conclusion</td>
</tr>
</tbody>
</table>

12.1 Toxicity to daphnia:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Time</th>
<th>Value 2</th>
<th>Species</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 48h</td>
<td>133 mg/l</td>
<td></td>
<td></td>
<td>Daphnia magna</td>
<td>Analogous conclusion</td>
</tr>
</tbody>
</table>

12.1 Toxicity to daphnia:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Time</th>
<th>Value 2</th>
<th>Species</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC/NOEL 21d</td>
<td>10.8 mg/l</td>
<td></td>
<td></td>
<td>Daphnia magna</td>
<td></td>
</tr>
</tbody>
</table>

12.1 Toxicity to algae:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Time</th>
<th>Value 2</th>
<th>Species</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 96h</td>
<td>52.4 mg/l</td>
<td></td>
<td></td>
<td>Pseudokirchneriella subcapitata</td>
<td></td>
</tr>
</tbody>
</table>

12.1 Toxicity to algae:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Time</th>
<th>Value 2</th>
<th>Species</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC/NOEL 10d</td>
<td>50 mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Species</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF</td>
<td>121 L/kg</td>
<td>Analogous conclusion</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 13: Disposal considerations

13.1 Waste treatment methods

**For the substance / mixture / residual amounts**

EC disposal code no.: n.a.

The waste codes are recommendations based on the scheduled use of this product. Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

16 01 14 antifreeze fluids containing hazardous substances

Recommendation:

- Sewage disposal shall be discouraged.
- Pay attention to local and national official regulations.
- E.g. suitable incineration plant.
- E.g. dispose at suitable refuse site.

For contaminated packing material

- Pay attention to local and national official regulations.
- Empty container completely.
- Dispose of packaging that cannot be cleaned in the same manner as the substance.
- Uncontaminated packaging can be recycled.
- Do not perforate, cut up or weld uncleaned container.
- Residues may present a risk of explosion.

### SECTION 14: Transport information

**General statements**

14.1. UN number or ID number: n.a.

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name: n.a.

14.3. Transport hazard class(es): n.a.

14.4. Packing group: n.a.

14.5. Environmental hazards: Not applicable

Tunnel restriction code: n.a.

Transport by sea (IMDG-code)

14.2. UN proper shipping name: n.a.

14.3. Transport hazard class(es): n.a.

14.4. Packing group: n.a.

14.5. Environmental hazards: Not applicable

Transport by air (IATA)

14.2. UN proper shipping name: n.a.

14.3. Transport hazard class(es): n.a.

14.4. Packing group: n.a.

14.5. Environmental hazards: Not applicable

**14.6. Special precautions for user**

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Maritime transport in bulk according to IMO instruments
Non-dangerous material according to Transport Regulations.

### SECTION 15: Regulatory information

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

Observe restrictions:
- Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
- Disodium tetraborate pentahydrate
- Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!
- Comply with trade association/occupational health regulations.

**Directive 2010/75/EU (VOC): 0 %**

#### 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

### SECTION 16: Other information

Revised sections: 1-16

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

**Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):**

<table>
<thead>
<tr>
<th>Classification in accordance with regulation (EC) No. 1272/2008 (CLP)</th>
<th>Evaluation method used</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT RE 2, H373</td>
<td>Classification according to calculation procedure.</td>
</tr>
</tbody>
</table>

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

- H360FD May damage fertility. May damage the unborn child.
- H302 Harmful if swallowed.
- H319 Causes serious eye irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.

**STOT RE — Specific target organ toxicity - repeated exposure**

- Acute Tox. — Acute toxicity - oral
- Eye Irrit. — Eye irritation
- Repr. — Reproductive toxicity

**Key literature references and sources for data:**

- Guidelines for the preparation of safety data sheets as amended (ECHA).
- Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).
- Safety data sheets for the constituent substances.
- ECHA Homepage - Information about chemicals.
- GESTIS Substance Database (Germany).
- German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).
- National Lists of Occupational Exposure Limits for each country as amended.
- Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

**Any abbreviations and acronyms used in this document:**
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polycylinchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
TOC Total organic carbon
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.
These statements were made by:
Chemical Check GmbH, Chemical Check Platz 1-7, D-32839 Steinheim, Tel.: +49 5233 94 17 0, Fax: +49 5233 94 17 90
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