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

1.1. Product identifier

144 Cooling system agent MP1440250AB

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

Use of the substance/mixture

Additive

1.3. Details of the supplier of the safety data sheet

Company name: TUNAP Deutschland Vertriebs GmbH & Co. Betriebs KG
Street: Bürgermeister-Seidl-Str. 2
Place: D-82515 Wolfratshausen
Telephone: +49 (0) 8171/1600 - 0
Telefax: +49 (0) 8171/1600 - 40
e-mail: sdb@tunap.com
Internet: www.tunap.com

1.4. Emergency telephone number:

+49 (0) 30 30 686 790 (Giftnotruf Berlin)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This mixture is not classified as hazardous according to Directive 1999/45/EC.

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

Hazard categories:
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Dam. 1
Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:
Causes skin irritation.
Causes serious eye damage.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazard components for labelling
ethanediol, ethylene glycol
tetrosodium ethylene diamine tetraacetate
Tolyltriazol Sodium salt

Signal word: Danger
Pictograms: GHS05-GHS08

Hazard statements

H315 Causes skin irritation.
H318 Causes serious eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe vapour.
P280 Wear Eye/face protection.
P302+P352 IF ON SKIN: Wash with plenty of Water and soap.
3.2. Mixtures

Hazardous components

<table>
<thead>
<tr>
<th>EC No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Classification according to Directive 67/548/EEC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classification according to Regulation (EC) No. 1272/2008 [CLP]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>REACH No</td>
<td></td>
</tr>
<tr>
<td>203-473-3</td>
<td>ethanediol, ethylene glycol</td>
<td>10 - &lt; 20 %</td>
</tr>
<tr>
<td>107-21-1</td>
<td>Xn - Harmful, R22</td>
<td></td>
</tr>
<tr>
<td>01-2119456816-28</td>
<td>Acute Tox. 4, STOT RE 2; H302 H373</td>
<td></td>
</tr>
<tr>
<td>200-573-9</td>
<td>tetrasodium ethylene diamine tetraacetate</td>
<td>1 - &lt; 3 %</td>
</tr>
<tr>
<td>64-02-8</td>
<td>Xn - Harmful, Xi - Irritant R20/22-41</td>
<td></td>
</tr>
<tr>
<td>01-2119436643-39</td>
<td>Acute Tox. 4, Eye Dam. 1; H302 H318</td>
<td></td>
</tr>
<tr>
<td>265-004-9</td>
<td>Tolytriazol Sodium salt</td>
<td>1 - &lt; 3 %</td>
</tr>
<tr>
<td>64665-67-2</td>
<td>C - Corrosive, Xn - Harmful R22-34-52-53</td>
<td></td>
</tr>
<tr>
<td>253-733-5</td>
<td>2-phosphonobutane-1,2,4-tricarboxylic acid</td>
<td>1 - &lt; 3 %</td>
</tr>
<tr>
<td>37971-36-1</td>
<td>Xi - Irritant R36</td>
<td></td>
</tr>
<tr>
<td>01-2119436643-39</td>
<td>Met. Corr. 1, Eye Irrit. 2; H290 H319</td>
<td></td>
</tr>
</tbody>
</table>

Full text of R, H and EUH phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation
Provide fresh air.

After contact with skin
Wash with plenty of water. Change contaminated clothing.

After contact with eyes
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
Rinse mouth immediately and drink plenty of water. Caution if victim vomits: Risk of aspiration!

4.2. Most important symptoms and effects, both acute and delayed
No information available.

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

SECTION 5: Firefighting measures
5.1. Extinguishing media

Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media
High power water jet.

5.2. Special hazards arising from the substance or mixture
The product itself does not burn.

5.3. Advice for firefighters
Use appropriate respiratory protection.

Additional information
Suppress gases/vapours/mists with water spray jet. 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
Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

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

6.3. Methods and material for containment and cleaning up
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections
Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means. Dust must be exhausted directly at the point of origin. When using do not eat, drink, smoke, sniff.

Advice on protection against fire and explosion
No special measures are necessary.

Further information on handling
Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels
Keep container tightly closed.

Advice on storage compatibility
No special measures are necessary.

Further information on storage conditions
Protect from frost.

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

SECTION 8: Exposure controls/personal protection
8.1. Control parameters

Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1</td>
<td>Ethane-1,2-diol, vapour</td>
<td>20</td>
<td>52</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
<td>104</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

Additional advice on limit values
a no restriction
b End of exposure or shift
c in long-term exposure: after several shifts
d prior to next shift

STEL (EC) : Short Term Exposure Limit
TWA (EC): time-weighted average
U: Urea
B: Blood

8.2. Exposure controls

Protective and hygiene measures
Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink.

Eye/face protection
Suitable eye protection: Tightly sealed safety glasses.
DIN EN 166

Hand protection
When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. 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.
Suitable material: NBR (Nitrile rubber) Breakthrough time (maximum wearing time) 480min
Thickness of the glove material 0,45 mm
DIN EN 374

Skin protection
Only wear fitting, comfortable and clean protective clothing.

Respiratory protection
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: pink
Odour: mild

pH-Value (at 20 °C):

Test method 9 DIN 19268

Changes in the physical state
Melting point: No information available.
Initial boiling point and boiling range: 100 °C
Sublimation point: No information available.
Softening point: No information available.
144 Cooling system agent MP1440250AB

Flash point: No information available.
Lower explosion limits: No information available.
Upper explosion limits: No information available.
Ignition temperature: No information available.
Vapour pressure: No information available.
Vapour pressure: No information available.
Density (at 20 °C): 1.1 g/cm³ DIN 51757
Bulk density: No information available.
Water solubility: insoluble
Partition coefficient: No information available.
Viscosity / dynamic: No information available. DIN 53019-1
Flow time: No information available.
(at 20 °C)
Vapour density: No information available.
Evaporation rate: No information available.
Solvent separation test: No information available.
Solvent content: No information available.

9.2. Other information
Solid content: No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reacts with : Acid, Oxidizing agents.

10.2. Chemical stability
The product is stable under normal conditions.

10.3. Possibility of hazardous reactions
No information available.

10.4. Conditions to avoid
No special precautionary measures are necessary.

10.5. Incompatible materials
No information available.

10.6. Hazardous decomposition products
No information available.

Further information
Do not mix with other chemicals.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Toxicocinetics, metabolism and distribution
No information available.

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

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Method</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1</td>
<td>ethanediol, ethylene glycol</td>
<td>oral</td>
<td>LD50</td>
<td>1600 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;3500 mg/kg</td>
<td>Rabbit</td>
<td></td>
</tr>
<tr>
<td>64-02-8</td>
<td>tetrasodium ethylene diamine tetraacetate</td>
<td>oral</td>
<td>LD50</td>
<td>1780 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative aerosol</td>
<td>LC50</td>
<td>3 mg/l</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td>64665-57-2</td>
<td>Tolytriazol Sodium salt</td>
<td>oral</td>
<td>LD50</td>
<td>735 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;2000 mg/kg</td>
<td>Rabbit</td>
<td></td>
</tr>
<tr>
<td>37971-36-1</td>
<td>2-phosphonobutane-1,2,4-tricarboxylic acid</td>
<td>oral</td>
<td>LD50</td>
<td>&gt;6500 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;4000 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
</tbody>
</table>

### Irritation and corrosivity

- Causes skin irritation.
- Causes serious eye damage.
- Irritating to eyes.

### Sensitising effects

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

### STOT-single exposure

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

### Severe effects after repeated or prolonged exposure

May cause damage to organs through prolonged or repeated exposure. (ethanediol, ethylene glycol)

### Carcinogenic/mutagenic/toxic effects for reproduction

- Based on available data, the classification criteria are not met.
- No indications of human carcinogenicity exist.
- No indications of human germ cell mutagenicity exist.
- No indications of human reproductive toxicity exist.

### Aspiration hazard

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

### Specific effects in experiment on an animal

No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity
144 Cooling system agent MP1440250AB

12.2. Persistence and degradability

There are no data available on the mixture itself. AOX (mg/l): 0

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

No information available.

Further information

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products
### SECTION 14: Transport information

**Land transport (ADR/RID)**

| 14.1. UN number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

**Inland waterways transport (ADN)**

| 14.1. UN number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

**Marine transport (IMDG)**

| 14.1. UN number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

**Air transport (ICAO)**

| 14.1. UN number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

**14.5. Environmental hazards**

**ENVIRONMENTALLY HAZARDOUS:** no

**14.6. Special precautions for user**

No dangerous good in sense of this transport regulation.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

No dangerous good in sense of this transport regulation.
Safety Data Sheet

according to Regulation (EC) No 1907/2006

144 Cooling system agent MP1440250AB

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Product code: 11AMP14400250AB
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1999/13/EC (VOC):

VOC-CH: - kg/l
VOC 1999/13/EG: - % w/w

Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

Additional information

94/69/EC (21st ATP). The benzene content of the product is less than 0.1%. It applies the annotation P. Classification and labeling as carcinogenic is not necessary.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA: International Air Transport Association
IMDG: International Maritime Code for Dangerous Goods
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL/DMEL: Derived No Effect Level / Derived Minimal Effect Level
WEL (UK): Workplace Exposure Limits
TWA (EC): Time-Weighted Average
ATE: Acute Toxicity Estimate
STEL (EC) Short Term Exposure Limit
LC50: Lethal Concentration
EC50: half maximal Effective Concentration
ErC50: means EC50 in terms of reduction of growth rate

Relevant R phrases (number and full text)

20/22 Harmful by inhalation and if swallowed.
22 Harmful if swallowed.
34 Causes burns.
36 Irritating to eyes.
41 Risk of serious damage to eyes.
52 Harmful to aquatic organisms.
53 May cause long-term adverse effects in the aquatic environment.

Relevant H and EUH statements (number and full text)

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H373 May cause damage to kidneys through prolonged or repeated exposure by skin contact.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Further 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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)