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

**1.1. Product identifier**

643 Radiator Cleaner 5 l AB

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

Use of the substance/mixture

Cleaner

**1.3. Details of the supplier of the safety data sheet**

Company name: TUNAP GmbH & Co. KG

Street: Bürgermeister-Seidl-Str. 2

Place: D-82515 Wolfratshausen

Telephone: +49 (0) 8171/1600 - 0

e-mail: sdb@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**

**Regulation (EC) No. 1272/2008**

**Hazard categories:**

Serious eye damage/eye irritation: Eye Irrit. 2

**Hazard Statements:**

Causes serious eye irritation.

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**2.2. Label elements**

**Regulation (EC) No. 1272/2008**

**Signal word:** Warning

**Pictograms:**

![Pictogram](image)

**Hazard statements**

H319 Causes serious eye irritation.

**Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

**2.3. Other hazards**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**
Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Quantity</th>
<th>GHS Classification</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH No</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320-34-5</td>
<td>Potassium pyrophosphate</td>
<td>5 - &lt; 10 %</td>
<td>Eye Irrit. 2; H319</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>126-92-1</td>
<td>Sodium etasulfate</td>
<td>1 - &lt; 3 %</td>
<td>Skin Irrit. 2, Eye Dam. 1; H315 H318</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of H and EUH statements: see section 16.

Labelling for contents according to Regulation (EC) No 648/2004
5 % - < 15 % phosphates, < 5 % non-ionic surfactants, < 5 % anionic surfactants, preservation agents (Benzisothiazolinone).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

After inhalation
Remove person to fresh air and keep comfortable for breathing. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After contact with eyes
Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

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

Headache, nausea, dizziness, fatigue, skin irritation

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.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Non-combustible liquids. 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

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.
5.3. Advice for firefighters
In case of fire and/or explosion do not breathe fumes. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

Additional information
Supress 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
Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wear personal protection equipment.

6.2. Environmental precautions
Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

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). Clean contaminated articles and floor according to the environmental legislation.

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
Observe instructions for use.
Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
When using do not eat, drink, smoke, sniff.
Wear personal protection equipment (refer to section 8).

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking.

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. Observe legal regulations and provisions.

Hints on joint storage
Do not store together with: Oxidizing agents. Pyrophoric or self-heating substances. Food and feedingstuffs.

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
Additional advice on limit values

- no restriction
- End of exposure or end of shift
- at long term exposure: after several previous shifts
- before next shift

blood (B)
Urine (U)

8.2. Exposure controls

Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures
Avoid exposure. Wear suitable protective clothing. Draw up and observe skin protection programme.

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

Hand protection
Protect skin by using skin protective cream. 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
Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
When exceeding the relevant workplace exposure limits, note the following:
Suitable respiratory protective equipment: Combination filter device (DIN EN 141).
Filtering device with filter or ventilator filtering device of type: P2
Observe the wear time limits as specified by the manufacturer.
Observe legal regulations and provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>colorless, turbid</td>
</tr>
<tr>
<td>Odour:</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

pH-Value (at 20 °C): 10,25 DIN 19268

Changes in the physical state

Melting point: not determined
Initial boiling point and boiling range: 100 °C
Sublimation point: not applicable
Softening point: not determined
### 643 Radiator Cleaner 1 AB

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pour point:</td>
<td>not determined</td>
</tr>
<tr>
<td>Sustaining combustion:</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td></td>
</tr>
<tr>
<td>Solid:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Gas:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Lower explosion limits:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Upper explosion limits:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Ignition temperature:</td>
<td>not applicable</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td></td>
</tr>
<tr>
<td>Solid:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Gas:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>not determined</td>
</tr>
<tr>
<td><strong>Oxidizing properties</strong></td>
<td></td>
</tr>
<tr>
<td>Not oxidising.</td>
<td></td>
</tr>
<tr>
<td>Vapour pressure:</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure:</td>
<td>No information available.</td>
</tr>
<tr>
<td>Density (at 20 °C):</td>
<td>1.052 g/cm³ DIN 51757</td>
</tr>
<tr>
<td>Water solubility:</td>
<td>easily soluble</td>
</tr>
<tr>
<td><strong>Solubility in other solvents</strong></td>
<td></td>
</tr>
<tr>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient:</td>
<td>not determined</td>
</tr>
<tr>
<td>Viscosity / dynamic:</td>
<td>DIN 53019-1</td>
</tr>
<tr>
<td>Vapour density:</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>not determined</td>
</tr>
</tbody>
</table>

### 9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid content:</td>
<td>not determined</td>
</tr>
</tbody>
</table>

### SECTION 10: Stability and reactivity

**10.1. Reactivity**

Do not mix with acids.

**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**

Protect from frost.

**10.5. Incompatible materials**

Oxidizing agents, Pyrophoric or self-heating substances.

**10.6. Hazardous decomposition products**

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

**Further information**

Do not mix with other chemicals.
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution
There are no data available on the mixture itself.

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

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320-34-5</td>
<td>Potassium pyrophosphate</td>
<td>oral</td>
<td>LD50</td>
<td>&gt;5000 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;2000 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation (4 h) aerosol</td>
<td>LC50</td>
<td>&gt;5 mg/l</td>
<td>Rat</td>
</tr>
<tr>
<td>126-92-1</td>
<td>sodium etasulfate</td>
<td>oral</td>
<td>LD50</td>
<td>2840 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;2000 mg/kg</td>
<td>Rabbit</td>
</tr>
</tbody>
</table>

Irritation and corrosivity
Causes serious eye irritation.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

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

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.

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.

Specific effects in experiment on an animal
No information available.

Additional information on tests
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity
The product is not: Ecotoxic.
12.2. Persistence and degradability
The product has not been tested.

12.3. Bioaccumulative potential
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
The product has not been tested.

12.6. Other adverse effects
No information available.

Further information
Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal
Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320-34-5</td>
<td>Potassium pyrophosphate</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>&gt;100 mg/l</td>
<td>96 h</td>
<td>Oncorhynchus mykiss (Rainbow trout)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>&gt;100 mg/l</td>
<td>72 h</td>
<td>Selenastrum capricornutum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>&gt;100 mg/l</td>
<td>48 h</td>
<td>Daphnia magna (Big water flea)</td>
</tr>
<tr>
<td>126-92-1</td>
<td>sodium etasulfate</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>&gt;100 mg/l</td>
<td>96 h</td>
<td>Oncorhynchus mykiss (Rainbow trout)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>&gt;511 mg/l</td>
<td>72 h</td>
<td>Desmodesmus subspicatus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>483 mg/l</td>
<td>48 h</td>
<td>Daphnia magna (Big water flea)</td>
</tr>
</tbody>
</table>

Waste disposal number of used product

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>070701</td>
<td>WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fine chemicals and chemical products not otherwise specified; aqueous washing liquids and mother liquors; hazardous waste</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>070401</td>
<td>WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides; aqueous washing liquids and mother liquors; hazardous waste</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150110</td>
<td>WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contaminated packaging
Wash with plenty of water. Completely emptied packages can be recycled.
## 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-TI/IATA-DGR)

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 information available.

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

not applicable

## SECTION 15: Regulatory information

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

#### EU regulatory information

- 2010/75/EU (VOC): No information available.
- 2004/42/EC (VOC): No information available.

#### Additional information

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

#### National regulatory information

- Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).
- Water contaminating class (D): 1 - slightly water contaminating

### 15.2. Chemical safety assessment

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

## SECTION 16: Other information

Revision No: 1,00  GB - EN  Revision date: 05.02.2019
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)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
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
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.

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.)