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

1.1 Product identifier
Trade name Trisodium citrate, anhydrous
Stock number: 45556
CAS Number: 68-04-2
EC number: 200-675-3

1.2 Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU 24 Scientific research and development

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Thermo Fisher (Kandel) GmbH
Zeppelinstr. 7b
76185 Karlsruhe / Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300
Email: tech@alfa.com
www.alfa.com
Informing department: Product safety Tel +49 (0) 7275 988687-0

1.4 Emergency telephone number:
Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)
Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
The substance is not classified as hazardous to health or the environment according to the CLP regulation.
Classification according to Directive 67/548/EEC or Directive 1999/45/EC Not applicable
Information concerning particular hazards for human and environment: No information known.
Other hazards that do not result in classification No information known.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008 Not applicable
Hazard pictograms Not applicable
Signal word Not applicable
Hazard statements Not applicable

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances
CAS# Designation: 68-04-2 2-Hydroxy-1,2,3-propanetricarboxylic acid, trisodium salt
Identification number(s):
EC number: 200-675-3

SECTION 4: First aid measures

4.1 Description of first aid measures
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Seek immediate medical advice.

After skin contact
Instantly wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact
Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing
Seek medical treatment.

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

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Sodium oxide

5.3 Advice for firefighters
Protective equipment:
Wear self-contained breathing apparatus.
Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

6.2 Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

6.3 Methods and material for containment and cleaning up: Collect mechanically.

Prevention of secondary hazards: No special measures required.

6.4 Reference to other sections
See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Handle under dry protective gas.
Keep containers tightly sealed.
Trade name **Trisodium citrate, anhydrous**

Store in cool, dry place in tightly closed containers.

**Information about protection against explosions and fires:** No information known.

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage**

- Requirements to be met by storerooms and containers: No special requirements.
- Information about storage in one common storage facility:
  - Store away from water.
  - Store away from strong bases.
  - Store away from reducing agents.
  - Do not store with organic materials.

**Further information about storage conditions:**

- Store under dry inert gas.
- This product is hygroscopic.
- Keep container tightly sealed.
- Store in cool, dry conditions in well sealed containers.
- Protect from humidity and keep away from water.

**7.3 Specific end use(s)**

No further relevant information available.

### SECTION 8: Exposure controls/personal protection

**Additional information about design of technical systems:**

- Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**8.1 Control parameters**

**Components with critical values that require monitoring at the workplace:**

- The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** No data

**8.2 Exposure controls**

**General protective and hygienic measures**

- The usual precautionary measures should be adhered to in handling the chemicals.
- Keep away from foodstuffs, beverages and food.
- Instantly remove any soiled and impregnated garments.
- Wash hands during breaks and at the end of the work.
- Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use breathing protection with high concentrations.

**Protection of hands:**

- Check protective gloves prior to each use for their proper condition.

<table>
<thead>
<tr>
<th>Material of gloves</th>
<th>Impervious gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetration time of glove material (in minutes)</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

### SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>General Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
</tr>
<tr>
<td>Colour:</td>
</tr>
<tr>
<td>Odour threshold:</td>
</tr>
<tr>
<td>pH-value:</td>
</tr>
</tbody>
</table>

**Change in condition**

- Melting point/Melting range: 300 °C
- Boiling point/Boiling range: Not determined
- Sublimation temperature / start: Not determined
- Inflammability (solid, gaseous): Not determined.
- Ignition temperature: Not determined.
- Decomposition temperature: Not determined
- Self-inflammability: Not determined.

**Danger of explosion:** Not determined.

<table>
<thead>
<tr>
<th>Critical values for explosion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower: Not determined</td>
</tr>
<tr>
<td>Upper: Not determined</td>
</tr>
</tbody>
</table>

**Steam pressure:** Not applicable.

**Density**

- Not determined

**Vapour density:** Not applicable.

**Evaporation rate:** Not applicable.

**Solubility in / Miscibility with**

- Water at 20 °C: 500 g/l Soluble

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

- Dynamic: Not applicable.
- Kinematic: Not applicable.

**9.2 Other information**

No further relevant information available.

### SECTION 10: Stability and reactivity

**10.1 Reactivity** No information known.

**10.2 Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.

**10.3 Possibility of hazardous reactions** No dangerous reactions known

**10.4 Conditions to avoid** No further relevant information available.

**10.5 Incompatible materials:**

- Bases
- Reducing agents
- Organic materials
- Water/moisture

**10.6 Hazardous decomposition products:**

- Carbon monoxide and carbon dioxide
- Sodium oxide
SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: No sensitizing effect known.
Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: No further relevant information available.
12.2 Persistence and degradability: No further relevant information available.
12.3 Bioaccumulative potential: No further relevant information available.
12.4 Mobility in soil: No further relevant information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation:
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleaning agent: Water, if necessary with cleaning agent.

SECTION 14: Transport information

UN-Number
ADR, ADN, IMDG, IATA
Not applicable
14.2 UN proper shipping name
ADR, ADN, IMDG, IATA
Not applicable
14.3 Transport hazard class(es)
ADR, ADN, IMDG, IATA
Class
Not applicable
Packing group
ADR, IMDG, IATA
Not applicable
14.5 Environmental hazards:
Not applicable.
14.6 Special precautions for user:
Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC
Code
Not applicable.
UN "Model Regulation":
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