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

1.1. Product identifier
Trade name/designation:

Citric Acid

REACH No.: 01-2119457026-42

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

1.3. Details of the supplier of the safety data sheet
Supplier (manufacturer/importer/only representative/downstream user/distributor):
Eaton Technologies GmbH
Langenlonsheim Branch
An den Nahewiesen 24
55450 Langenlonsheim
Germany
Telephone: +49 6704 204-0 (Diese Nummer ist nur zu Bürozeiten besetzt.)
Telefax: +49 6704 204-121
E-mail: SDB@Eaton.com
Website: www.eaton.com/filtration

1.4. Emergency telephone number
Notfallauskunft bei Vergiftungen: Giftinformationszentrum Mainz (Deutsch und Englisch). Emergency medical information: Poison information center Mainz (German and English), 24h: +49 6131 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [CLP]:

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation (Eye Irrit. 2)</td>
<td>H319: Causes serious eye irritation.</td>
<td></td>
</tr>
</tbody>
</table>

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS07
Exclamation mark.

Signal word: Warning

<table>
<thead>
<tr>
<th>hazard statements for health hazards</th>
<th>Precautionary statements Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>H319 Causes serious eye irritation.</td>
<td>P264.1 Wash hands thoroughly after handling.</td>
</tr>
<tr>
<td></td>
<td>P280 Wear protective gloves/protective clothing/eye protection/face protection.</td>
</tr>
</tbody>
</table>
Citric Acid

Precautionary statements

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>P305 + P351 + P338</td>
</tr>
<tr>
<td>P337 + P313</td>
</tr>
</tbody>
</table>

2.3. Other hazards

Adverse physicochemical effects:
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

SECTION 3: Composition / information on ingredients

3.1. Substances

Description:
2-hydroxy-1,2,3-propanetrioncarbonsäure, Citric Acid

Hazardous ingredients / Hazardous impurities / Stabilisers:

<table>
<thead>
<tr>
<th>product identifiers</th>
<th>Substance name</th>
<th>Classification according to Regulation (EC) No 1272/2008 [CL P]</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.: 77-92-9</td>
<td>citric acid</td>
<td></td>
<td>100 %</td>
</tr>
<tr>
<td>EC No.: 201-069-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REACH No.: 01-2119457026-42</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

Following inhalation:
Provide fresh air.
In case of respiratory tract irritation, consult a physician.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.
IF ON CLOTHING: Change contaminated, saturated clothing.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion:
Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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

Symptoms: irritant.
Response: Irritating to eyes.

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:
Water, Carbon dioxide (CO2), Water mist. Foam, Extinguishing powder
Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media:
High power water jet
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 18-Nov-2016
Print date: 21-Nov-2016
Version: 5 modifiziert
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Citric Acid

5.2. Special hazards arising from the substance or mixture
In case of fire may be liberated: Carbon monoxide, Carbon dioxide (CO2), Pyrolysis products, toxic
In case of fire and/or explosion do not breathe fumes.
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however
leads to the danger of dust explosion.

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

5.4. Additional information
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Dispose of waste according to applicable legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Personal precautions:
Wear personal protection equipment. Provide adequate ventilation as well as local exhaustion at critical
locations.
Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes.
Keep unprotected people away and stay on the upwind side.

6.1.2. For emergency responders
No data available

6.2. Environmental precautions
Do not allow to enter into soil/subsoil.
Knock down dust with water spray jet.
Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up
For cleaning up:
Take up mechanically. Avoid dust formation.
Wash with plenty of water.
Treat the recovered material as prescribed in the section on waste disposal.

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
Advises on safe handling:
Avoid dust formation. Provide adequate ventilation as well as local exhaustion at critical locations. Avoid
contact with skin, eyes and clothes.

Fire prevent measures:
Take precautionary measures against static discharges. Explosive dust-air mixtures may form.
Keep away from sources of ignition - No smoking.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Advises on general occupational hygiene
Wash hands before breaks and after work.
When using do not eat, drink, smoke, sniff.
Remove contaminated, saturated clothing. Wash contaminated clothing prior to re-use.
Citric Acid

7.2. Conditions for safe storage, including any incompatibilities

**Technical measures and storage conditions:**
Suitable floor material: Acid-resistant

**Packaging materials:**
Keep/Store only in original container.

**Requirements for storage rooms and vessels:**
Keep container tightly closed in a cool, well-ventilated place.
Keep container dry. Protect from moisture.

**Hints on storage assembly:**
Do not store together with: Alkali (lye), Oxidising agent, Solvent

7.3. Specific end use(s)
No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values
No data available

8.1.2. Biological limit values
No data available

8.1.3. DNEL-/PNEC-values

<table>
<thead>
<tr>
<th>Substance name</th>
<th>PNEC Value</th>
<th>PNEC type</th>
</tr>
</thead>
<tbody>
<tr>
<td>citric acid</td>
<td>1,000 mg/l</td>
<td>① PNEC sewage treatment plant (STP)</td>
</tr>
<tr>
<td>CAS No.: 77-92-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>citric acid</td>
<td>3.64 mg/kg bw/day</td>
<td>① PNEC sediment, marine water</td>
</tr>
<tr>
<td>CAS No.: 77-92-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>citric acid</td>
<td>36.4 mg/kg bw/day</td>
<td>① PNEC sediment, freshwater</td>
</tr>
<tr>
<td>CAS No.: 77-92-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>citric acid</td>
<td>0.044 mg/l</td>
<td>① PNEC aquatic, marine water</td>
</tr>
<tr>
<td>CAS No.: 77-92-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>citric acid</td>
<td>0.44 mg/l</td>
<td>① PNEC aquatic, freshwater</td>
</tr>
<tr>
<td>CAS No.: 77-92-9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

8.2.1. Appropriate engineering controls
Provide adequate ventilation as well as local exhaustion at critical locations.
To follow:
limiting value of inert dust (alveolar content): 3 mg/m³ TRGS 900
limiting value of inert dust (breathable content): 10 mg/m³

8.2.2. Personal protection equipment

**Eye/face protection:**
Tightly sealed safety glasses.

**Skin protection:**
Avoid contact with eyes and skin.
Protect skin by using skin protective cream.
Suitable material: The glove material has to be impermeable and resistant to the product/the substance/the preparation. Due to missing tests no recommendation to the glove material can be given for the product/the preparation/the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
Breakthrough time (maximum wearing time): The exact break through time has to be found out by the manufacturer of the protective gloves nad has to be observed.

**Respiratory protection:**
Respiratory protection necessary at: Generation/formation of dust
Suitable respiratory protection apparatus: short-term: Filtering device (DIN EN 147) P 1
Citric Acid

Other protection measures:
Protective clothing: Take off immediately all contaminated clothing.
General health and safety measures: Keep away from food, drink and animal feedingstuffs. When using
do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

8.2.3. Environmental exposure controls
No data available

8.3. Additional information
No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state: crystalline</td>
<td>Colour: transparent; whitish</td>
</tr>
<tr>
<td>Odour: odourless</td>
<td></td>
</tr>
</tbody>
</table>

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>1.8</td>
<td>25 °C</td>
<td>Gehalt an gelöster Substanz: 5 %</td>
</tr>
<tr>
<td>Melting point</td>
<td>~ 153 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freezing point</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature (°C):</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>345 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ignition temperature in °C</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>1.665 g/ml</td>
<td>20 °C</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td>850 – 950 kg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water solubility (g/L)</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>not determined</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
Reacts with: Alkali (lye), Oxidising agent, strong; Reducing agent.
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however
leads to the danger of dust explosion.
10.4. Conditions to avoid
Keep away from heat.
Protect from moisture.
Remove all sources of ignition.

10.5. Incompatible materials
Response: Oxidising agent, Reducing agent. Base

10.6. Hazardous decomposition products
not known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

**Acute oral toxicity:**
LD50: Mouse: 5,400 mg/kg

**Acute dermal toxicity:**
LD50: Rat: > 2,000 mg/kg

**Skin corrosion/irritation:**
slightly irritant but not relevant for classification.
Based on available data, the classification criteria are not met.

**Eye damage/irritation:**
Causes serious eye damage:
Rabbit: 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.

SECTION 12: Ecological information

12.1. Toxicity

**Aquatic toxicity:**
Acute fish toxicity:
Leuciscus idus (golden orfe) LC50: 96 h: 440-760 mg/l, OECD 203
Acute Daphnia toxicity:
Daphnia magna LC50: 24h: 1535 mg/l
Daphnia magna EC50: 72 h: 120 mg/l

**Effects in sewage plants:**
Product is acid. Before discharge into sewage plants the product normally needs to be neutralised.

**Additional ecotoxicological information:**
Do not allow to enter into surface water or drains.

12.2. Persistence and degradability

**Additional information:**
Further ecological information: According to the present state of knowledge negative ecological effects are not expected. Readily biodegradable (according to OECD criteria).
Citric Acid

12.3. Bioaccumulative potential
Accumulation / Evaluation:
No indication of bioaccumulation potential.

12.4. Mobility in soil
No data 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 data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
The disposal of the product has to be carried out in accordance with the legal requirements. EWC waste codes are strictly industry-oriented, therefore waste classification has to be done by the waste producer.

Waste treatment options
Appropriate disposal / Package:
Non-contaminated packages may be recycled.

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

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
Citric Acid

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation
Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Störfallverordnung
Remark:
Unterliegt nicht der StörfallV.

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

Other regulations, restrictions and prohibition regulations
For this substance a chemical safety assessment has been carried out.

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]

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

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation (Eye Irrit. 2)</td>
<td>H319: Causes serious eye irritation.</td>
<td></td>
</tr>
</tbody>
</table>

16.5. Relevant R-, H- and EUH-phrases (Number and full text)
No data available

16.6. Training advice
No data available

16.7. Additional 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.