



## Citric Acid Anhydrous SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH); 1272/2008 & 453/2010 (CLP)

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

|  |  |
|--|--|
| <b>1.1 Product identifier</b>  |  |
| Chemical Name  | Citric acid  |
| CAS No.  | 77-92-9  |
| EINECS No.   | 201-069-1  |
| <b>1.2 Relevant identified uses of the substance or mixture and uses advised against</b> |  |
| Identified use(s)  | Used as a sour agent, buffering agent and antioxidant in the food industry; a correctant in pharmaceutical industry; used in detergents, buffering and chelating, sizing and as a sequestrant. |
| Uses advised against   | No uses advised against  |

### SECTION 2: HAZARDS IDENTIFICATION

|  |  |
|--|--|
| <b>2.1 Classification of the substance or mixture</b>                        |  |
| <b>2.1.1 Regulation (EC) No. 1272/2008 (CLP)</b>                             | Warning. H319: Causes serious eye irritation   |
| <b>2.1.2 Directive 67/548/EEC &amp; Directive 1999/45/EC</b>                 | Xi; Irritant. R36  |
| <b>2.2 Label elements</b>  |  |
| <b>2.2.1 According to Regulation (EC) No. 1272/2008 &amp; 453/2010 (CLP)</b> |  |
| Hazard Pictogram   |   |
| Signal word(s)   | Warning  |
| Hazard statement(s)  | H319: Causes serious eye irritation  |
| Precautionary statement(s)   | P264. Wash hands thoroughly after handling.<br>P280 Wear eye protection.<br>P305 + P351 + P338. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P337+P313: If eye irritation persists: Get medical advice/attention. |
| <b>2.2.2 According to Directive 67/548/EEC &amp; Directive 1999/45/EC</b>    |  |
| Hazard Symbol  |  Irritant   |
| Risk Phrases   | R36. Irritating to eye   |

|     |                        |  |
|-----|------------------------|--|
|     | Safety Phrases         | S26. Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice |
| 2.3 | Other hazards          | Not known  |
| 2.4 | Additional Information | Not known  |

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substance

| Composition | %W/W          | EC No.    | CAS No  |
|-------------|---------------|-----------|---------|
| Citric acid | 99.5 to 100.5 | 201-069-1 | 77-92-9 |

### SECTION 4: FIRST AID MEASURES



|     |  |  |
|-----|--|--|
| 4.1 | Description of first aid measures                                      |  |
|     | Inhalation   | Move to fresh air.   |
|     | Skin Contact   | Wash off immediately with plenty of water for at least 15 minutes. If irritation persists, call a physician.                       |
|     | Eye Contact  | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.   |
|     | Ingestion  | Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Consult a physician. |
| 4.2 | Most important symptoms and effects, both acute and delayed            | Serious eye damage/eye irritation: Eye Irrit. 2  |
| 4.3 | Indication of immediate medical attention and special treatment needed | Consult a physician.   |

### SECTION 5: FIRE-FIGHTING MEASURES

|     |   |  |
|-----|---|--|
| 5.1 | Extinguishing Media                                   |  |
|     | 5.1.1 Suitable Extinguishing Media                    | Use alcohol-resistant foam, carbon dioxide, dry powder or water fog.   |
|     | 5.1.2. Unsuitable Extinguishing Media                 | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  |
| 5.2 | Special hazards arising from the substance or mixture | Oxides of carbon   |
| 5.3 | Advice for fire-fighters                              | In the event of fire, wear self-contained breathing apparatus and wear suitable protective clothing.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations |
| 5.4 | Additional information                                | Explosion hazard from the generation of dust.  |

### SECTION 6: ACCIDENTAL RELEASE MEASURES

|     |   |  |
|-----|---|--|
| 6.1 | Personal precautions, protective equipment and emergency procedures | Use personal protective equipment.   |
| 6.2 | Environmental precautions   | Do not flush substance into surface water or sewage system.                    |
| 6.3 | Methods and material for containment and cleaning up                | Sweep up or vacuum up spillage and collect in suitable container for disposal. |
| 6.4 | Reference to other sections   | Section 8  |
| 6.5 | Additional Information  | Not known  |

### SECTION 7: HANDLING AND STORAGE

|     |                               |  |
|-----|-------------------------------|--|
| 7.1 | Precautions for safe handling | Avoid contact with skin and eyes. Use only in well-ventilated areas. Do not breathe vapours/dust |
|-----|-------------------------------|--|




- 7.2 **Conditions for safe storage, including any incompatibilities** Keep locked up or in an area accessible only to qualified staff
- Storage** Store in tightly closed original container in a dry, cool and well ventilated place. Keep in original container.
- Incompatible materials** Strong oxidising substances, strong alkalis.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 **Control parameters**
- 8.1.1 **Occupational Exposure Limits** No values assigned
- 8.1.2 **Biological limit values** No values assigned
- 8.2 **PNECs and DNELs**
- DNELs - Health** No true DNEL for systemic toxicity can be derived. Local effects, eye irritation should be considered.

### PNEC/PEC – Environment

| Compartment                            | PNEC                                 |
|--|--------------------------------------|
| Aquatic PNECaqua – freshwater (mg/l)   | 0.44                                 |
| PNECaqua - marine water (mg/l)         | 0.044                                |
| PNECfreshwater-sediment (mg/kg d.w.)   | 3.46. (Equivalent to 0.752 mg/kg ww) |
| The PNECmarine-sediment mg/kg d.w.     | 34.6. (Equivalent to 7.52 mg/kg ww)  |
| Terrestrial (PNECsoil mg/kg d.w.)      | 33.1                                 |
| Sewage treatment plant PNEC STP (mg/l) | >1000                                |
| Atmospheric Compartment                | Not applicable                       |

- 8.3 **Exposure controls**
- 8.3.1 **Appropriate engineering controls** Minimise the risk of dust inhalation. Provide adequate ventilation.
- 8.3.2 **Personal protection equipment**
- Eye/face protection** Safety glasses with side-shields
-  **Skin protection (Hand protection/ Other)** Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of workday. Protective gloves must satisfy the specifications of EU Directive 89/686/EEC and EN 374
-  **Respiratory protection** Provide adequate ventilation. Wear respirator where dust level exceeds 10 mg/m<sup>3</sup>.
-  **Thermal hazards** Not applicable
- 8.3.3 **Environmental Exposure Controls** Do not allow to enter drains, sewers or watercourses
- 8.3.4 **Hygiene measures** Do not smoke in the work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 **Information on basic physical and chemical properties**
- Appearance Solid, crystalline
- Colour White
- Odour Odourless
- pH (Value) 1.7 (100g/l)
- Melting Point Approx. 153 °C at 1,013 hPa
- Boiling point/boiling range (°C): Decomposes before boiling

|   |  |
|---|--|
| Flash Point (°C)                                  | Not known  |
| Flammability                                      | Non flammable  |
| Density   | 1.665 g/cm <sup>3</sup> at 20°C  |
| Solubility (Water)                                | 590 g/L at 20°C  |
| Solubility (Other)                                | Soluble in alcohol   |
| Partition Coefficient (Log Kow: -n-Octanol/water) | -0.2 to -1.8   |
| Decomposition Temperature (°C)                    | Not known  |
| Explosive properties                              | Not explosive  |
| Oxidising properties                              | Not oxidising  |
| <b>9.2 Other information</b>                      | The fraction below 100 µm = 84.1%; the D50 of the fraction below 100 µm = at 31.99 µm. |
| Granulometry                                      | pKa: 3.13, 4.76 and 6.4 at 25°C  |
| Dissociation constant                             |  |

## SECTION 10: STABILITY AND REACTIVITY

|  |                                   |
|--|-----------------------------------|
| <b>10.1 Reactivity</b>                         | Reacts with alkaline materials    |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions    |
| <b>10.3 Conditions to avoid</b>                | Exposure to heat and moisture.    |
| <b>10.4 Incompatible materials</b>             | Sodium nitrite, potassium nitrite |
| <b>10.5 Hazardous Decomposition Product(s)</b> | Oxides of carbon.                 |

## SECTION 11: TOXICOLOGICAL INFORMATION

|  |                          |
|--|--------------------------|
| <b>11.1 Information on toxicological effects</b> |                          |
| <b>11.1.1 Substances</b>                         |                          |
| <b>Acute toxicity</b>                            |                          |
| Ingestion LD50 (mouse)                           | 5400 mg/kg bw            |
| Inhalation                                       | No data                  |
| <b>Skin Contact. LD50 (dermal):</b>              | >2000 mg/kg bw           |
| <b>Skin corrosion/irritation</b>                 | Mild skin irritant       |
| <b>Eye Contact</b>                               | Irritating               |
| <b>Respiratory or skin sensitization –skin</b>   | Not a sensitizer         |
| <b>Mutagenicity</b>                              | Not a mutagen            |
| <b>Carcinogenicity</b>                           | Not a carcinogen         |
| <b>Reproductive toxicity</b>                     | Not a reproductive toxin |
| <b>STOT - single exposure</b>                    | Not known                |
| <b>STOT - repeated exposure</b>                  | Not known                |
| <b>Aspiration hazard</b>                         | Not known                |
| <b>11.2 Other information</b>                    | Not known                |

## SECTION 12: ECOLOGICAL INFORMATION

|  |                              |
|--|------------------------------|
| <b>12.1 Toxicity</b>                             |                              |
| Fish LC50 (48hr)                                 | 440 mg/l                     |
| D. Magna LC 50 (24hr)                            | 1535 mg/l                    |
| Algae (8 d mat. (nominal) based on cell density) | 425 mg/l                     |
| <b>12.2 Persistence and degradability</b>        | Biodegradable                |
| <b>12.3 Bioaccumulative potential</b>            | No expected to bioaccumulate |
| <b>12.4 Mobility in soil</b>                     | Not applicable               |
| <b>12.5 Results of PBT and vPvB assessment</b>   | Not a PBT or a vPvB          |
| <b>12.6 Other adverse effects</b>                | Not known                    |

## SECTION 13: DISPOSAL CONSIDERATIONS

|                                     |   |
|-------------------------------------|---|
| <b>13.1 Waste treatment methods</b> | Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority. |
| <b>13.2 Additional Information</b>  | Not known   |

## SECTION 14: TRANSPORT INFORMATION

|      |   |                                       |
|------|---|---------------------------------------|
| 14.1 | Land transport (ADR/RID)  | Not subject to transport regulations. |
| 14.2 | Sea transport (IMDG)  | Not subject to transport regulations. |
| 14.3 | Air transport (ICAO/IATA)   | Not subject to transport regulations. |
| 14.4 | Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not known                             |

## SECTION 15: REGULATORY INFORMATION

|        |  |  |
|--------|--|--|
| 15.1   | Safety, health and environmental regulations/legislation specific for the substance or mixture substance |  |
| 15.1.1 | EU regulations   | User to follow EU directives and regulations |
|        | Authorisations and/or restrictions on use  | Not applicable                               |
| 15.1.2 | National regulations   | User to follow national regulations          |

## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Version 1.

### LEGEND

|      |                                   |
|------|-----------------------------------|
| LTEL | Long Term Exposure Limit          |
| STEL | Short Term Exposure Limit         |
| STOT | Specific Target Organ Toxicity    |
| DNEL | Derived No Effect Level           |
| PNEC | Predicted No Effect Concentration |

### References:

Chemical Safety Report for citric acid and citrates  
Regulation (EC) No. 1272/2008 & 453/2010 (CLP)  
Directive 67/548/EEC & Directive 1999/45/EC

### Risk Phrases and Safety Phrases

R36: Irritating to eyes

S26: Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

### Hazard statement(s) and Precautionary statement(s)

H319: Causes serious eye irritation

P264: Wash hands thoroughly after handling.

P280: Wear eye 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.

**Training advice:** Ensure staff and workers receive adequate training with regular updates in the handling of chemicals

**Additional Information.** Not known

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