

Product Information

Citric Acid Monohydrate

General Information

Citric acid is a natural occurring fruit acid, produced commercially by microbial fermentation of a carbohydrate substrate. Citric acid is the most widely used organic acid and pH-control agent in foods, beverages, pharmaceuticals and technical applications.

Chemical Data

| | |
|-----------------------|---|
| Chemical Nomenclature | 2-hydroxypropane-1,2,3-tricarboxylic acid hydrate |
| Chem. Formula | $C_6H_8O_7 \cdot H_2O$ |
| Molar Mass | 210.14 g/mol |
| pH (5 %) | 1.85 |
| REACH No. | 01-2119457026-42-0000 |
| EC No. | 201-069-1 |
| CAS No. | 5949-29-1 |
| E-No. | E 330 |

Specification

Citric acid monohydrate is specified to meet the requirements of the latest editions of the European Pharmacopoeia (Ph. Eur.), the United States Pharmacopeia (USP), the Food Chemicals Codex (FCC), and of Commission Regulation (EU) No 231/2012.

Parameters

| | |
|---------------------------------|--------------------------------|
| Odour | typical, practically odourless |
| Identification | conforms |
| Appearance of solution | clear and colourless |
| Clarity of solution | conforms |
| Colour of solution | conforms |
| Readily carbonisable substances | conforms |
| Oxalic acid / oxalate | max. 100 mg/kg |
| Sulphate | max. 100 mg/kg |
| Heavy metals | max. 5 mg/kg |
| Arsenic | max. 1 mg/kg |
| Lead | max. 0.5 mg/kg |
| Mercury | max. 0.5 mg/kg |
| Calcium | max. 30 mg/kg |
| Iron | max. 3 mg/kg |
| Chloride | max. 5 mg/kg |
| Residue on ignition | max. 0.05 % |
| Sulphated ash | max. 0.05 % |
| Water | 7.5 – 8.8 % |
| Assay | 99.7 – 100.3 % |

Characteristics

Citric acid monohydrate occurs as colourless crystals or as white, crystalline powder with a strongly acidic taste. It is efflorescent in dry air, very soluble in water, freely soluble in ethanol (96%) and sparingly soluble in ether.

Citric acid monohydrate is non-toxic and has a low reactivity. It is chemically stable if stored at ambient temperatures. In its monohydrate form citric acid is more hygroscopic than in its anhydrous form. The monohydrate is, therefore, more prone to caking than the anhydrous. Citric acid monohydrate is fully biodegradable.

Standard Granulations


| Type | Particle size | Limits |
|-------|------------------------|----------------------|
| N1560 | > 1.25 mm < 0.40 mm | max. 5% max. 10% |
| N1500 | > 1.25 mm < 0.20 mm | max. 5% max. 10% |
| F6000 | > 0.63 mm < 0.20 mm | max. 10% max. 10% |

Legal Aspects

In Europe, citric acid monohydrate is listed as generally permitted food additive (E 330) and may be added to all foodstuffs, following the “quantum satis” principle, as long as no special regulation restricts the use.

The US Food and Drug Administration (FDA) has affirmed citric acid as GRAS (generally recognized as safe) and permitted the use in food according to current GMP (CFR § 184.1033), without setting an upper limit.

Citric acid is classified and labelled according to GHS (Globally Harmonized System), implemented by the European Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) as follows:

| Hazard Pictograms | Signal Word | Hazard Statements | Precautionary Statements |
|---|-------------|---|--|
|  | Warning | H319: Causes serious eye irritation. | Prevention: P264: Wash hands thoroughly after handling. P280: Wear protective gloves/ protective clothing/ eye protection/ face protection. Response: 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. |

Standard Packaging and Storage

Citric acid monohydrate is available in 25 kg net PE bags or in 1000 kg net big bags with inner PE lining.

Citric acid monohydrate may be stored for at least 3 years in original or tightly closed containers. Storage at temperatures higher than 30°C and/or humidity higher than 70% should be avoided in order to prevent caking.

The information contained herein has been compiled carefully to the best of our knowledge. We do not accept any responsibility or liability for the information given in respect to the described product. Our product has to be applied under full and own responsibility of the user, especially in respect to any patent rights of others and any law or government regulation.
