

1. 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.

2. CHEMICAL DATA

Chemical Nomenclature	2-hydroxy-1,2,3-propanetricarboxylic acid
Chem. Formula	C ₆ H ₈ O ₇
Molecular Weight	192.12
pH (5 %)	1.80
Bulk Density	400 - 1300 kg/m ³
REACH No.	01-2119457026-42-0000
EC No.	201-069-1
CAS No.	77-92-9
E-No.	E 330

3. SPECIFICATION

Citric acid is supplied in accordance with the current requirements of the Food Chemicals Codex (FCC), the US Pharmacopeia (USP), the European Pharmacopoeia (Ph. Eur.), and the 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	< 100 mg/kg
Sulphate	< 100 mg/kg
Heavy metals	< 5 mg/kg
Arsenic	< 1 mg/kg
Lead	< 0.5 mg/kg
Mercury	< 0.5 mg/kg
Calcium	< 30 mg/kg
Iron	< 3 mg/kg
Chloride	< 5 mg/kg
Residue on ignition	< 0.05 %
Sulphated ash	< 0.05 %
Water	< 0.50 %
Assay	99.7 – 100.3 %

4. CHARACTERISTICS

Citric acid occurs as colourless crystals or as white, crystalline powder. It is an odourless substance with a strongly acidic taste. It is slightly deliquescent in moist air, very soluble in water, freely soluble in ethanol (96%) and sparingly soluble in ether.

Citric acid is non-toxic and has a low reactivity. It is chemically stable if stored at ambient temperatures. Although it is not very hygroscopic, caking may occur upon prolonged storage at humidity above 70%. Citric acid is fully biodegradable and can be disposed of with regular waste or sewage.


Standard Type	Granulations	Particle size	Limits
Medium	N1560	> 1.25 mm < 0.40 mm	max. 5% max. 10%
Medium	N1500	> 1.25 mm < 0.20 mm	max. 5% max. 10%
Fine	F6000	> 0.63 mm < 0.20 mm	max. 10% max. 10%

5. LEGAL ASPECTS

In Europe, citric acid 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:

Pictogram:	Signal Word:	Hazard statement	Precautionary statements: P264, P280, P305, P351, P338, P337, P313:
	Warning	Causes serious eye irritation.	Wash hands thoroughly after handling. Wear eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

6. STANDARD PACKAGING & STORAGE

Citric acid is available in 25 kg net PE bags or in 1000 kg net big bags with inner PE lining. Citric acid may be stored for at least 3 years in original or tightly closed containers. Prolonged storage at temperatures higher than 30°C and/or humidity higher than 70% should be avoided in order to prevent caking.