



WORLD GOOD
WAY INC. INTERNATIONAL
TRADING

Citric Acid



CITRIC ACID

General Information

Citric acid ($C_6H_8O_7$) is a weak organic acid found in citrus fruits. It is produced commercially by microbial fermentation of a carbohydrate substrate. Citric acid is the most widely used organic acidulant, antioxidant and pH-control agent in foods, beverages, pharmaceuticals and technical applications.



Specification

World Good Way Inc. supplies citric acid anhydrous and monohydrate which complies with requirements of the Food Chemical Codex (FCC), European Pharmacopoeia (Ph. Eur.), the US Pharmacopoeia (USP), the British Pharmacopoeia (BP) and the Commission Directive 96/77/EC.

Characteristics



Citric acid occurs as colorless crystals or a white, crystalline powder at room temperature. It is an odorless substance with a strongly acidic taste. It is slightly deliquescent in moist air, very soluble in water, freely soluble in ethanol and sparingly soluble in ether.

Citric acid is produced in monohydrate or anhydrous form. Monohydrate citric acid contains

one water molecule for every molecule of citric acid, in contrast to anhydrous form which contains none.

Citric acid anhydrous and monohydrate can be easily handled because it is non-toxic and have a low reactivity. Citric acid must be stored though in a cool, dry and well-ventilated area because it is prone to caking due to its slightly hygroscopic characteristic. In its monohydrate form, citric acid is more hygroscopic than in its anhydrous form.

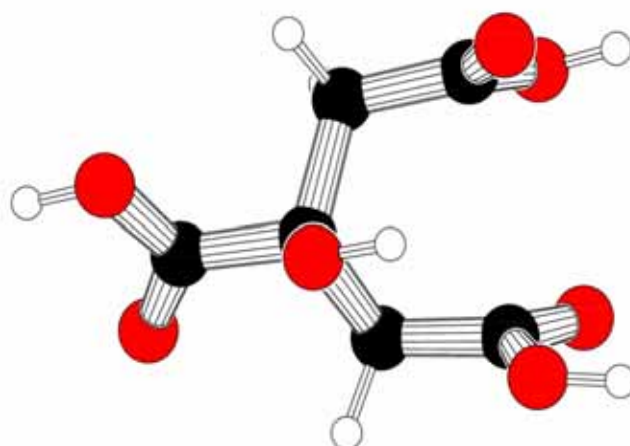
Citric Acid's Unique Properties

The application of citric acid in food and beverages is due to its unique combination of benefits:

- As acidulant, citric acid is the preferred ingredient due to its high solubility, pleasant tart taste and excellent flavor-blending characteristics.
- As a buffering agent, citric acid and its salts help formulators to maintain optimum pH for maximum stability of active ingredients. Citric acid shows the widest buffering capacity (pH 2.5-6.5) of all organic acids, and therefore can give the food the flexibility needed to formulate optimal end products. Its ability to adjust pH is beneficial for optimal pectin gelling and gelatin settling in jam, jellies and gelatin desserts.
- As antioxidant, citric acid stabilizes color, taste, flavor and vitamins in various food products including processed fruit, potatoes, vegetables, fish and meat products. This property is attributable to the ability of citric acid to form complexes with trace metals.

The application of citric acid in personal care consumer products such as shampoo, astringent, lotion, etc is due to its unique characteristics to:

- Adjusts pH and enhance action of methyl parabens, a known preservative used in the cosmetics and pharmaceutical industries thus increasing the shelf life of the products



The application of citric acid in pharmaceuticals is due to its combined distinctive abilities to:

- Provide effervescence to antacid, analgesic, artificial sweetener tablets and denture cleansers
- Maintain rapid dissolution and stability of active ingredients in oral tablets and oral liquids
- Enhance activity of preservatives
- Mask the bitter medicinal taste by its tart taste and enhances flavor in chewable tablets
- Improve palatability and solubility of cathartics and analgesics

The application of citric acid in detergent and cleaners product is due to its combine characteristics to:

- Optimize pH and seize trace metal ions
 - Replaces phosphates
 - Eliminate metal oxidation products from the surface of ferrous and non-ferrous metals
 - Remove chloride stress cracking
 - Easily decompose
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Citric acid's industrial application is all encompassing due to its unique ability to:

- Adjust pH
- Acts as set retarding, water reducing agent in concrete/mortar/plaster
- Functions as a complexing agent in textiles and oil well treatment
- Replaces more corrosive and hazardous strong acids
- Enhances flavour in tobacco
- Induces complete combustion in cigarettes
- Retards gelation in adhesives
- Acts as hardener component in adhesives
- Acts as binder in refractory cements
- Improves feeding effect in animal feeding



Safety

Citric acid is recognized as safe for use in food by all major national and international food regulatory agencies. It is naturally present in almost all forms of life, and excess citric acid is readily metabolized and eliminated from the body.

Interestingly, despite its occurrence in the body, intolerance to citric acid in the diet is known to exist. Literatures on citric intolerance however are few as the condition appears to be rare, but like other types of food intolerance it is often described as a "pseudo-allergic" reaction.

Contact with dry citric acid or with concentrated solutions can result in skin and eye irritation, so protective clothing should be worn (e.g. dust mask, goggles or safety glasses and gloves) when handling these materials.



Form / Granulation / Particle Size

Citric acid anhydrous and monohydrate are available in different granulations. For anhydrous form, mesh 30-100 (coarse granulation) and mesh 80-120 (fine granulation) are available while for monohydrate form mesh 8-60 is available. Particle size exceeding this mesh number is also available upon request.

Packaging

Citric acid anhydrous and monohydrate are available in 25 kg net polylined paper or craft bags. Packing of 500-1000 Kg per bag is also available upon request.

Handling and Storage

Citric acid should be stored in a cool, dry, ventilated area. It must be protected against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids).



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