Technical Data Sheet

Natural L(+)-tartaric acid E334

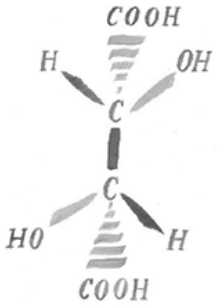
chemical name
L(+)-tartaric acid
L-2,3-dihydroxibutanedioic acid
d-α,β-dihydroxysuccinic acid

chemical formula $C_4H_6O_6$

molecular mass 150.09 g/mol

CAS number 87-69-4

EINECS number 201-766-0



state alterations none

bulk density (20°C) 1.76 g/cm^3

solubility (water 20°C) 1.39 g/mL

pH (sol. 0.1 N) 2.2

melting range 168-170°C

Definition

Tartaric acid is of **natural** origin, obtained by extraction of lees during winemaking (ref. Ph. Eur.).

Tartaric acid contains not less than 99.5 per cent and not more than the equivalent of 101.0 per cent of the dried substance.

Tartaric acid appears as white or almost white crystalline powder or colorless crystals.

Dextrorotatory tartaric acid is the natural diastereoisomer of tartaric acid. It is widely present in nature in the juice of many kinds of fruit, both free and combined with potassium, calcium or magnesium.
It is known since ancient times as its potassium acid salts deposited as crystals during fermentation of wine and was called *faecula* (little yeast) by the Romans.
In modern processes, the potassium bitartrate obtained during wine making is first converted into calcium tartrate, which is then hydrolised into tartaric acid and calcium sulphate.
Besides being used in wine making – where it helps to correct the natural acidity of musts and wines – tartaric acid is also used to prepare effervescent powders (bubbly table water) and preserved food, in bread making (preparation of bread making emulsifying agents), in pharmaceutics (preparation of medicines) and in the construction business, where tartaric acid is used to prepare gypsum to be used on prefab walls and panels (added to gypsum, tartaric acid makes it catch more slowly and this makes it easier to distribute).

HACCP

Our Company applies the HACCP self-control system to guarantee our products (food additives) comply with the law and with contract specifications and prevent hygienic and health hazards, safeguarding public health.

Synoptic table and inside specifications

Natural L(+)-tartaric acid	Reg. (UE) 231/2012	Ph. Eur. / B. P.	N. F.	Food Chemicals Codex	Codex Œnologique International	Inside Specifications
Acidity test (identification)		compliant (test A)				
Test for tartrate (identification)	positiv	compliant (test B)	compliant (test A)	compliant (test Tartrate)		
IR absorption (identification)			compliant (test B)	compliant (test Infrared Absorption)		
Further tests (identification)					compliant (test 6.1, 6.2, 6.3, 6.4)	
Assay	> 99.5%	99.5 - 101.0%	99.7 - 100.5%	99.7 - 100.5%	> 99.5%	**99.5 - 101.0%**
Specific optical rotation	+ 11.5 - + 13.5°	+ 12.0 - + 12.8°	+ 12.0 - + 13.0°	+ 12.0 - + 13.0°	+ 11.5 - + 13.5°	**+ 12.0 - + 12.8°**
Loss on drying	< 0.5%	< 0.2%	< 0.5%	< 0.5%		**< 0.2%**
Sulfated ash	1000 mg/kg	< 0.1%		< 0.05%	< 0.1%	**< 0.05%**
Sulfates		< 150 ppm	compliant (test <221>)	compliant (test Sulfate)	< 1 g/kg	**< 150 ppm**
Chlorides		< 100 ppm	compliant (test <221>)		< 1 g/kg	**< 100 ppm**
Oxalates (oxalic acid)	< 100 mg/kg	< 360 ppm	compliant (test Limit of oxalate)	compliant (test Oxalate)	< 100 mg/kg	**< 100 ppm**
Calcium		< 200 ppm				**< 200 ppm**
Iron					< 10 mg/kg	**< 10 mg/kg**
Arsenic					< 3 mg/kg	**< 3 mg/kg**
Mercury	< 1 ppm				< 1 mg/kg	**< 1 ppm**
Lead	< 2 ppm			< 2 mg/kg	< 2 mg/kg	**< 2 ppm**
Heavy metals			< 10 ppm			**< 10 ppm**

Sieve analysis

Type 1	Type 2	Type 3	Type 4	Type 5
Min 80% < 125 µm	Min 95% > 125 µm	Approx 90% 250/425 µm	Min 95% > 250 µm	Min 85% > 500 µm
Max 5% > 250 µm	100% < 425 µm		Max 5% > 710 µm	Approx 25% > 1000 µm

Nutritional values for 100 g of product

Energy value	1292 kJ, 298 kcal
Sodium	absent
Potassium	-
Calcium	< 200 ppm
Iron	< 10 ppm
Water	-
Ash	< 0.05%
Fats	absents
Cholesterol	absent
Proteins	absents
Carboxylic acids	99.5 - 101.0%
Vitamins	absents

Authorisation of the use of this additive

In accordance with European Regulation 1129/2011, the additive is authorized to be used *quantum satis* in all the categories; 5000 mg/kg in cocoa and chocolate products and in processed cereal-based foods and baby foods for infants and young children.

Declarations

In the formulation of tartaric acid, there are no *Allergens* listed in Annex II to European Regulation 1169/2011, neither by adding nor due to cross-contamination.

In accordance with the European Regulation 1881/2006, there are no *Aflatoxins*, *Dioxins*, *Polycyclic Aromatic Hydrocarbons*. There are not even any *Pesticides*, in accordance with the European Regulation 396/2005.

Tartaric acid and raw materials used for its production do not contain and do not come from *Genetically Modified Organisms*.

Tartaric acid does not contain, is not produced and does not come into contact with *substances of animal origin*.

The product is suitable for consumption by *vegans* and *vegetarians*.

Tartaric acid has *Kosher* and *Halal* certifications.

Packaging

The finished product is packed in 25 kg paper bags with polyethylene inside or in 500/1000 kg big bags or in 25 kg drums containing bagged product, marked as per law requirements and palletized.

Shelf life

The period of minimum durability of tartaric acid is 5 years, in its original packaging sealed by the producer. As the product is hygroscopic and available in different granulations, powders cake at different times.

Recommended storage conditions

Store in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Superimposing unallowed.