

Technical data sheet

MALIC ACID (SAP Cod.: 37318A-37318F-37318P-37318S)

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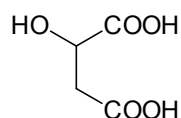
Synonyms

2-Hydroxybutanedioic acid; Butanedioic acid, hydroxyl (+/-); Hydroxysuccinic acid.

Formula

C₄H₆O₅

Structural formula



Molecular weight: 134.1

CAS number

6915-15-7

EINECS number

230-022-8

EEC number

E296

Product specification

Characteristics	Unit	Value	Method*	Reference
Appearance		White or nearly white crystal	GM037	
Odor and Taste ⁽¹⁾		Characteristic	GM037_all.01	
Assay	%	99.0 ÷ 100.5	GM005_all.29	USP – NF
Malate Test ⁽²⁾		Passes test		FCC
Melting Range ⁽¹⁾	°C	128 ÷ 132	GM027_all.01	USP <891>
Fumaric acid	%	1.0 max	GM001_all.03	USP – NF
Maleic acid	%	0.05 max	GM001_all.03	USP – NF
Residue on Ignition (Sulfated ash) ⁽¹⁾	%	0.1 max	GM015_all.01	USP <281>
Water insoluble matter ⁽¹⁾	%	0.1 max	GM038_all.01	USP – NF

Characteristics	Unit	Value	Method*	Reference
Heavy metals (as Pb) ⁽¹⁾	ppm	20 max	GM008	USP <233>
Arsenic ⁽¹⁾	ppm	3 max	GM008	USP <233>
Lead ⁽¹⁾	ppm	2 max	GM008	USP <233>
Mercury ⁽¹⁾	ppm	1 max	GM008	USP <233>
IR Spectrum ⁽¹⁾		Conform to STD	GM006_all.01	USP <197A>
Optical (Specific) rotation @ 25°C ⁽²⁾	Degrees	- 0.10 ÷ + 0.10		
Granulometric analysis			GM030	
<u>Granular</u>				
• Through 10 mesh sieve	%	100 min		
• Through 50 mesh sieve	%	10 max		
<u>Fine granular</u>				
• Through 25 mesh sieve	%	99 min		
• Through 100 mesh sieve	%	5 max		
<u>Special fine granular</u>				
• Through 40 mesh sieve	%	90 min		
• Through 70 mesh sieve	%	10 max		
<u>Powder</u>				
• Through 60 mesh sieve	%	90 min		
Microbiologic data ⁽³⁾				
• Bacteria	CFU/g	<10		
• Moulds & yeasts	CFU/g	<10		
• Total coliforms	CFU/g	<10		
• Faecal coliforms	CFU/g	<10		
• Salmonella	/25g	absent		

* Internal methods available upon request.

Note: ⁽¹⁾ This analysis is performed on regular basis

⁽²⁾ This analysis is performed on regular basis by an external laboratory

⁽³⁾ This analysis is performed on regular basis by an external laboratory and does not appear on the Certificate of Quality

Typical properties

Characteristics	Unit	Value
Decomposition temperature	°C	170 ÷ 180
Heat of combustion	Kcal/mol	320
Heat of solution	Kcal/mol	- 4.9
Solubility in water @ 20°C	g/100g	55.5
Viscosity (50% aqueous solution @ 20°C)	mPa.s	6.5
<u>pH vs concentration @ 25°C</u>		
0.1% w/w	2.8	
1.0% w/w	2.4	
3.0% w/w	2.0	
5.0% w/w	1.9	
10.0% w/w	1.8	
20.0% w/w	1.6	
50.0% w/w	0.9	

- The above figures are typical values and are not intended as specification limits

Main applications

Malic acid is mainly used as food additive in beverages, bakery products, confectioneries, desserts, jams and fruit jellies, as preservative in fruit and vegetables and as technological additive in animals feed.

It is also used in the Pharmaceutical and Cosmetic sectors and in a number of typically industrial uses as:

- metal treatment
- textile industry
- plating industry
- retardant for plasters and cements

Polynt malic acid complies with the current edition of **US FCC, USP-NF**

It is produced in accordance with

- **FSSC 22000** and it complies with the provision of the **Commission Regulation (EU) No 231/2012** laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council.
- **FAMI-QS Code of Practice for Feed Additive and Premixture Operators** and it complies with **Regulation (EC) No 1831/2003** for additives used in animal nutrition. **Category:** Technological Additives (cat.1), **Functional Group:** Preservatives (a), Acidity regulators (j).

Malic acid is free from proteins, fibre, starches, vitamins, fats, preservatives, colours, antioxidants or milk products and every product having an animal origin.

It is suitable for the vegetarian, vegan, diabetic, Jewish or Muslim diets.

Polynt malic acid is Kosher certified.

Polynt malic acid is certified Halal by WHA (product code: WHA-ITA-00232-001 → WHA-ITA-00232-012)

Handling

Packaging: 25 kg or 50 lbs multi-wall paper bags with polyethylene liners;
500/1000 kg big bags;

Storage: it must be stored at room temperature, away from open flames or other potential ignition sources, in a dry and well-ventilated place.

Shelf life: 36 months from production date.

The information contained in this sheet is correct and accurate and is based on our technical and scientific knowledge and on literature at the date of going to press. Such information relates only to use of the products in the pure state and for the purposes stated herein. Nothing stated here may be taken or construed as implying of any existing patents. Nor is any warranty, whether explicit or implicit, given with regard to results to be obtained through the use of the aforesaid information.