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Technical data sheet

Malic acid

Version: 05 date: April 2012

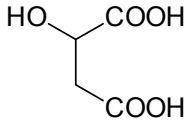
Synonyms

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

Formula

$C_4H_6O_5$

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		GM 037	
Assay	%	99.5 min	GM005all01	
Melting range	°C	130 ÷ 132	GM027	ASTMD-3417
Fumaric acid	%	1.0 max	GM001all03	
Maleic acid	%	0.05 max	GM001all03	
Ash (Sulphated)	%	0.02 max	GM015	ASTM D-482
Water insoluble matter	%	0.05 max	GM038	

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Characteristics	Unit	Value	Method*	Reference
Heavy metals (as Pb)	ppm	10 max	GM008	
Arsenic	ppm	1 max	GM008	
Iron	ppm	5 max	GM008	
Lead	ppm	1 max	GM008	
Mercury	ppm	1 max	GM008	
Moisture	%	0.3 max	GM010	ASTM E-203
IR Spectrum		Conform to STD		
Optical (Specific) rotation @ 25°C	Degrees	- 0.10 ÷ + 0.10		
Granulometric analysis			GM030	ASTM D-1921
Granular				
• Through 10 mesh sieve	%	100 min		
• Through 50 mesh sieve	%	10 max		
Fine granular				
• Through 25 mesh sieve	%	99 min		
• Through 100 mesh sieve	%	5 max		
Special fine granular				
• Through 40 mesh sieve	%	90 min		
• Through 70 mesh sieve	%	10 max		
Powder				
• Through 60 mesh sieve		90 min		
[(1)] **Microbiologic data**				
• Bacteria	CFU/g	< 10		
• Moulds & yeasts	CFU/g	< 10		
• Total coliforms	CFU/g	< 10		
• Faecal coliforms	CFU/g	< 10		
• Salmonella	/25g	absent		

Note: [(1)] This is a statistical control realized in an external laboratory and do not appear on the Certificate of Quality

* *Internal methods available upon request.*

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Typical properties

Characteristics	Unit	Value
Odour		Characteristic
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
pH vs concentration @ 25°C		
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	

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 (preservative and acidity regulator) in all 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 and Eu.Ph**
It is produced in according to **ISO 22000 + PAS 220** and **FAMI-QS Code of Practice for Feed Additive and Premixture Operators.**

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, diabetic, Jewish or Muslim diets.

Polynt malic acid is Kosher certified.

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Handling

Packaging:	25 kg or 50 lbs multi-wall paper bags with polyethylene liners; 500/1000 kg big bags; bulk (40% - 50% solution)
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.