**Thirumalai Chemicals Ltd.**

# Malic Acid

**Data Sheet No. MAL - 0907**

## Food Grade

### Description: Chemical Formula - $C_4 H_6 O_5$

**Malic Acid** is an important organic compound having a sharp, clean, tart, acidic taste. It is free flowing, stable and non-hygroscopic.

### Specification

| Characteristics | Specification | |
|---|---|---|
| Appearance | White Crystalline Granular/ Fine Granular / Powder | |
| Odour | Little or no odour | |
| Assay on dry basis, Wt. % (Titrimetry) | Min. | 99.5 |
| Maleic Acid Wt., % | Max. | 0.05 |
| Fumaric Acid, Wt. % | Max. | 1.0 |
| Residue on ignition, Wt. % | Max. | 0.05 |
| Moisture, Wt. % | Max. | 0.3 |
| Colour-10% solution, APHA | Max. | 10 |
| Optical(Specific) Rotation, $[\alpha]_D^{25^\circ}$ | Between | -0.10 and +0.10 |
| Heavy metals (as Pb), ppm | Max. | 10 |
| Lead (as Pb), ppm | Max. | 2 |
| Arsenic (as As), ppm | Max. | 1 |
| Water insoluble matter, Wt. % | Max. | 0.1 |

### Grades of Granularity:

**Granular**

100% passing through USS 10 mesh
10% Max. Passing through USS 50 mesh

**Fine Granular**

99% Min. passing through USS 25 mesh
5% Max. passing through USS 100 mesh

**Powder**

75% Min. passing through USS 50 mesh

### Packaging

1. PE lined, PE laminated HDPE bag -25 Kg
2. PP laminated 4 Ply Paper Bag - 25 Kg
3. Fibre drum with PE liner - 30 Kg
4. 800 Kg & 1000 Kg bulk bag with inner liner
5. 1 Kg pouches in 25 Kg HDPE bag - 25 Kg

### Full Container Load (FCL):

**Palletised and Stretch Wrapped**

**1. Packed in 25 Kg HDPE Bags**

40 x 25 Kg Bags / Pallet = 1.0 MT
36 x 25 Kg Bags / Pallet = 0.9 MT

A) 0.9 MT x 20 Pallets = 18 MT/ FCL

B) 1.0 MT x 18 Pallets and
0.9 MT x 2 Pallets = 19.8 MT/ FCL

**2. Packed in 25 Kg Paper Bags**

32 x 25 Kg Paper Bags / Pallet
= 0.8 MT x 20 Pallets = 16 MT/ FCL

**3. Packed in Fibre Drums**

18 x 30 Kg Fibre drums / Pallet
= 0.54 MT x 20 pallets = 10.8 MT/ FCL

**4. Packed in Bulk bags**

20 x 800 Kg bulk bag on pallets = 16 MT / FCL
20 x 1000 Kg bulk bag on pallets = 20 MT / FCL

**For further details please contact**

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**Safety**

United States, Food and Drug Administration has approved the use of Malic Acid as a general-purpose food additive, except in Baby Foods. It is included in the FDA list as a Generally Recognised as Safe (GRAS) substance.

**Legislation**

Thirumalai Chemicals' Malic Acid meets the Food Chemical Codex specifications. German Food additive purity regulation, allows Malic Acid to be added to all food products, without any quantitative limit.

In UK Malic Acid is approved for use by the following:

1. The food standards (Preserves) order - 1953

2. The Softdrinks regulation 1964, amended 1995

3. Miscellaneous additive in Food regulation 1980 No.1834 for general use for an acidulant.

In India, Malic acid has been approved for use in carbonated beverages and as an acidulant in miscellaneous foods by -

Prevention of Food Adulteration Act 1995

**Uses**

Malic Acid, the natural acid constituent of apple, finds wide application in the food industry. Due to its compatibility with all types of flavour, the flavour enhancing property, the sharp, lingering acid taste and the high water solubility nature, it is ideally suited for the preparation of Juices, Softdrinks, Cider and Wines. Its' non-hygroscopic, free flowing nature, makes it the preferred acid for dry squash juice mixes.

When used in sugar confectionery, the low melting point of Malic Acid gives greater clarity to the finished product.

In diet products, it suppresses the bitter after taste of artificial sweeteners and reduces the amount needed, without affecting the sweetness.

In fruit and vegetable canning, Malic Acid is used for pH adjustment.

In the edible oil processing/refining it is used to remove and control traces of metal impurities and as a synergist in admixture with antioxidants, to control rancidity.

In cheese preparation, it increases the product yield.

Malic Acid is also used in Pharmaceuticals, Cosmetics, Metal cleaning and Textile finishing.