
Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
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Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification:**Product Description:** DL - Malic acid**Synonyms:** DL - Hydroxy succinic acid, Hydroxybutanedioic acid**CAS-No:** 6915-15-7 / 617-48-1 (Old CAS No.)**EC-No.:** 230-022-8**Molecular Formula:** C₄H₆O₅

REACH Registration No: A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

1.2. Relevant identified uses of the substance or mixture and uses advised against:**Recommended Use:** Laboratory chemicals, for synthesis in Food industry, Use as Preservative**1.3. Details of the supplier of the safety data sheet:**

- **Company** **Finar Limited**
184-186/P, Chacharwadi Vasna,
Sarkhej-Bavla Highway,
Ta.: Sanand, Dist.: Ahmedabad,
Email: info@finarchemicals.com
Web: www.finarchemicals.com
- **E-Mail Address** safety@finarchemicals.com; info@finarchemicals.com

1.4. Emergency Telephone Number:

- For Emergency contact on: +91 - 2717 - 616 717
- Registered office No: +91 - 79 - 40040085

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

SECTION 2: HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture:****Classification according to Regulation (EC) No 1272/2008**

Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label Elements:**Labeling according Regulation (EC) No 1272/2008****Pictogram****Signal word:** **Warning****Hazard statement(s)**

H319 Causes serious eye irritation.

Precautionary statement(s)

P280 Wear eye protection / face protection.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

Supplementary Hazard Statement

None

Reduced labelling (≤125 ml)**Pictogram****Signal word:** **Warning****2.3. Other Hazards:** Not known

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances:** DL - Malic acid

3.2. **Mixtures:**

Component	CAS-No	EC-No.	Weight %
DL - Malic acid	6915-15-7 617-48-1 (Old CAS No.)	230-022-8	<=100

SECTION 4: FIRST AID MEASURES

4.1. **Description of first aid measures:**

- **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

- **If inhaled**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

- **If Contact with skin**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

- **In case of eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Get medical attention.

- **If swallowed**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2. **Most important symptoms and effects, both acute and delayed:**

Irritant effects

4.3. **Indication of any immediate medical attention and special treatment needed:**

No information available

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media:**

Suitable Extinguishing Media- Use of Water, Foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media- For this substance/mixture no limitations of extinguishing agents are given.

5.2. Special hazards arising from the substance or mixture:

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3. Advice for firefighters:

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further Information:

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures:**

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2. Environmental precautions:

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4. Reference to other sections:

For disposal see Sections 13.

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

7.2. Conditions for safe storage, including any incompatibilities:

Keep in a dry and well-ventilated place at ambient temperature. Keep container tightly closed.

7.3. Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters**

Contains no substances with occupational exposure limit values.

8.2. Exposure Controls:

- **Appropriate Engineering Controls:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Personal Protective Equipment:

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye & Face Protection-

Safety goggles

Other Protective equipment-

Protective clothing

Respiratory Protection-

Required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful Substances.

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

Environmental Exposure Controls-

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties:**

- **Appearance:** Colorless
- **Physical State:** Solid
- **Odour:** Weak
- **Odour Threshold:** No data available
- **pH:** ca. 2.3 at 10 g/l 20 °C / ~ 2 1% aq. solution
- **Melting Point:** 133 °C
- **Critical Temperature:** No data available
- **Vapor Pressure:** 0.00039 Pa at 25 °C
- **Relative Vapor Density:** No data available
- **Density:** 1.601 g/cm³ at 20 °C
- **Auto-Ignition Temperature:** 349 °C / 340 °C
- **Decomposition Temperature:** > 150 °C / > 225°C - < 235°C
- **Volatility:** No data available
- **Bulk Density:** ca.800 kg/m³ / 1615 kg/m³ at 20°C
- **Viscosity:** No data available
- **Water/Oil Dist. Co eff.:** No data available
- **Partition coefficient: n-Octanol/Water:** No data available
- **Ionicity (in Water):** No data available
- **Lower Explosion Limit:** No data available
- **Upper Explosion Limit:** No data available
- **Flash Point:** 245 °C
- **Water Solubility:** 558 g/l at 20 °C

9.2. Other information:**Molecular Formula:** C₄H₆O₅**Molecular Weight:** 134.09 g/mol

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity:**

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Forms explosive mixtures with air on intense heating.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2. Chemical stability:

The product is chemically stable under standard ambient conditions (room temperature).

10.3. Possibility of hazardous reactions: -

Violent reactions possible with: Strong Oxidizing agents.

10.4. Conditions to avoid:

Excess heat. Incompatible products.

10.5. Incompatible materials:

Bases, Metals, Reducing Agent

10.6. Hazardous decomposition products:

Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute Oral toxicity**

LD50 Rat: > 3,200 mg/kg

(Lit.)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute Inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

Acute Dermal toxicity

No data available

Skin corrosion/irritation

Rabbit

Result: slight irritation

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

(RTECS)

Serious eye damage/eye irritation

Rabbit

Result: Severe irritations

(RTECS)

Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Result: negative

(Lit.)

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Further Information:

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Substances which occur in nature

Other dangerous properties cannot be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity:**

Toxicity to fish:

LC50 Carassius auratus (goldfish): 295 mg/l; 96 h

(External MSDS)

Toxicity to daphnia and other aquatic invertebrates:

Immobilization LC50 - Daphnia magna (Water flea) - ca. 240 mg/l - 48 h

(OECD Test Guideline 202)

12.2 Persistence and degradability:

Biodegradability

>90%; 3 d

(External MSDS)

Readily biodegradable

Biochemical Oxygen Demand (BOD)

385 mg/g (5 d)

(External MSDS)

Chemical Oxygen Demand (COD)

726 mg/g

(External MSDS)

12.3 Bioaccumulate potential:

Partition coefficient: n-octanol/water

log Pow: -1.26

(experimental)

(Lit.) Bioaccumulation is not expected.

12.4 Mobility in soil:

No data available

12.5 Results of PBT and vPvB assessment:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects:

Additional ecological information

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

Biological effects:
 Harmful effect due to pH shift.
 Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods:

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	Not classified as dangerous in the meaning of transport regulations.		
14.2 Proper shipping name	Not classified as dangerous in the meaning of transport regulations.		
14.3 Class	Not classified as dangerous in the meaning of transport regulations.		
14.4 Packing group	Not classified as dangerous in the meaning of transport regulations.		
14.5 Environmentally hazardous	No		
14.6 Special precautions for user	Not classified as dangerous in the meaning of transport regulations.		
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			
Not Relevant			

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

National Legislation
 Storage class 10-13

15.2 Chemical safety assessment:

For this product a chemical safety assessment was not carried out.

Material Safety Data Sheet

Product Name	<u>DL - Malic Acid</u>
---------------------	-------------------------------

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H319 Causes serious eye irritation.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Pictogram



Signal word: **Warning**

Hazard statement(s)

H319 Causes serious eye irritation.

Precautionary statement(s)

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

References: Not available

Created: 04/08/2020

Disclaimer:

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