

MATERIAL SAFETY DATA SHEET
SDS / MSDS

Product Name: DL - Malic Acid

Revision Date: 17-09-2021

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1. Manufacturer and Substance Identification

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Chemical Name	: DL-MALIC ACID
CAS Number	: 6915-15-7 / 617-48-1 (Old CAS No.)
EC Number	: 210-514-9
Molecular Formula	: C ₄ H ₆ O ₅
Molecular Weight	: 134.09
Synonyms	: Hydroxybutanedioic acid, Hydroxysuccinic acid
Identified uses	: Used as Technical additives, chemical preservatives. Food additives (GRAS substance) used for processing in food industry. Used in protective coatings, dyestuff, adhesives, polymer & resins, pharmaceutical applications, construction, fertilizers (Agro) and for laboratory use

2. Hazard Identification**2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008

For Physico-Chemical properties : Not Classified

For Human health hazards

- | | |
|---|--------------------|
| 1. Acute Toxicity oral | : Not Classified |
| 2. Skin corrosion / irritation | : Not Classified |
| 3. Serious damage / eye irritation | : Category 2, H319 |
| 4. Respiration sensitization | : Not Classified |
| 5. Skin sensitization | : Not Classified |
| 6. Specific target Toxicity single (SPOT) | : Not Classified |

For Environmental hazards : Not Classified

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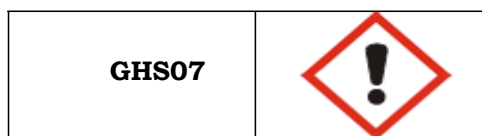
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2.2. Label elements

Labeling according to Regulation (EC) No 1272/2008

Hazard pictogram:



Signal word : Warning

Hazard Statement:

H319 - Causes serious eye irritation

Precautionary statement(s):

P264 - Wash hands thoroughly after handling.

P280 - Wear Protective gloves / protective clothing / eye protection / face protection

P305 + P 351 + P 338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P 313: If eye irritation persists: Get medical advice / attention

3. Composition / Information on ingredients

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Content (W/W)</u>	<u>EINECS</u>
Malic Acid	6915-15-7 / 617-48-1	More than 99.5%	210-514-9
Maleic Acid	110-16-7	Less than 0.05%	203-742-5

4. First Aid Measures

Inhalation	:	Remove person from the area of contamination to fresh air.
Skin Contact	:	Wash affected body areas with large volumes of water, if irritation persists, see a physician.
Eyes	:	Flush eyes with clean water, lifting eyelids occasionally, flush with water for 15 minutes.
Other	:	Launder contaminated clothing before re-using.

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5. Fire Fighting Measures

- Flash Point : 245 ° C
- Lower Explosion Limit : 2.8 % (V)
- Upper Explosion Limit : 16.8 % (V)
- Flammable Limits : Not Applicable
- Extinguishing Media : Use media that is appropriate to treat surrounding fire.
- Special Fire Fighting Procedures : Use fire-fighting procedure that is appropriate to treat surrounding fire, all fire fighters should use self-contained breathing apparatus and full firefighting turnout gear.

Unusual fire explosion hazard: Dust can form explosive mixtures with air.

6. Accidental Release Measures

- Personal precautions : Avoid inhalation, Use personal protective equipment. Ensure adequate ventilation.
- Environmental precautions: Remove all sources of ignition. Avoid discharge into environment
- Methods for cleaning up : Use mechanical handling equipment. Avoid raising dust. Flush with plenty of water. Dispose of in compliance with local and national regulations.
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7. Handling and Storage**Handling**

- General advice : Ensure thorough ventilation of stores and work areas. Take precautionary measures against static discharges. Keep away from sources of ignition - No smoking.
- Protection against Fire and explosion : Avoid dust formation. Dust can form an explosive mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Electrical devices must meet the specified temperature class.

Storage

- General advice : It must be stored in ambient temperature, properly covered in a dry well ventilated place.
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8. Exposure Controls / Personal Protection

Engineering Measures	: Prevent dust buildup by providing adequate ventilation.
Hygiene Measures	: Wash hands before consumption of food or drink
Skin and Body	: Wear approved protective work boots, work clothing.
Hands	: Gloves - protective recommended.
Eyes	: Safety glass with side shields, chemical goggles if contact likely.
Hair	: Some form of hat or hair covering
Other Devices	: Maintain eye wash facility in work area.

9. Physical and Chemical Properties

Form	: Crystalline Fine granules
Colour	: White
Melting Point ° C	: 133
Boiling Point ° C	: Decomposes at 150
Density g/ml at 20° C	: 1.601
Vapor Density (air = 1)	: 4.6
Vapor Pressure mmHg at 20° C	: <0.1
Flash Point ° C	: 245

10. Stability and Reactivity

Stability	: Stable at normal temperatures.
Conditions to Avoid	: Temperatures over 80°C and moisture.
Materials to Avoid	: Strong oxidants, Strong bases, Alkali metals, Amines and Carbonates.
Decomposition Products	: Maleic Acid, Maleic Anhydride, Carbon Monoxide and Carbon Dioxide.

11. Toxicological Information

Acute Toxicity	: LD ₅₀ (oral, rats): 2000 mg/kg
	: LC ₅₀ (inhalation, rats) : >1.306 mg/L for 4 Hrs

12. Ecological Information

Not Available

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13. Disposal Consideration

Disposal method

Product : To be performed as per local regulations.

Contaminated packaging : Can be land filled or incinerated, in compliance with Local Regulations

14. Transport InformationRoad transport ADR / RIDMaritime transport IMDGAir transport ICAO/IATA

: Not classified as a dangerous good under transport regulations

15. Regulatory Information

INTERNATIONAL REGULATIONS

Listed in EC : 296
Brussels Nomenclature : 2918.19
US Food and Drug Administration : 21 CFR 184.1069
Responsibility of the receiver to have the knowledge of the local and national regulations.

16. Other Information

The information provided in this Safety Data Sheet is given in good faith and is correct to the best of our knowledge and information at the date of publication. It is designed only as guidance for safe handling, storage, transportation, use and disposal. No warranty is expressed or implied.

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