

Safety Data Sheet
According to Regulation (EC) No 1907/2006, Annex II,
Amended by COMMISSION REGULATION (EU) 2020/878,
According to REGULATION (EC) No 1272/2008

DL-malic acid

Version 1.0

Issue date: 08-03-2022

Revision date: 08-03-2022

CIRS SDS Record Number: CSSS-TCO-010-150595

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Identification on the label/Trade name: DL-malic acid

Additional identification:DL-Hydroxysuccinic acid

Nanoform is NOT covered by this SDS.

Identification of the product: CAS#617-48-1 EC#210-514-9

Index Number: Not available

REACH registration No.: 17-2119384584-28-0000

1.2 Relevant identified uses of the substance or mixture and uses advised against:

1.2.1 Identified uses:

DL-Malic acid can be used as an acidulant in cool drinks (including lactobacillus drinks, milk drinks, carbonated drinks,cola), frozen foods (including sherbet and ice cream),processed foods (including wine and mayonnaise). It is used as color-keeper and antiseptic of juice. It is also used as emulsion stabilizer of egg yolk. DL-Malic acid also can be used as pharmaceutical intermediate, cosmetic, rinse, metal cleaner, buffering agent, retarder in textile industry, fluorescent whitening agent of polyester fibre.

1.2.2 Uses advised against:

Not available.

1.3 Details of the supplier of the safety data sheet:

Supplier(Only representative): -

Supplier(Manufacturer): Shangxi Hengqiang Chemical Co.,Ltd

Address: Xingjiang Economic and Technological Development Zone,Yuncheng,Shangxi

Contact person(E-mail): jiangzhaowei@vip.sina.com

Telephone: +86-359-7670516

Fax: +86-359-7670516

1.4 Emergency telephone Number:

+86-359-7670516 Only available during office hours (9:00a.m.-17:30p.m.)

Available outside office hours? YES NO

Section 2 Hazards Identification

2.1 Classification of the substance or mixture:

2.1.1 Classification of the substance:

The substance is classified as following according to REGULATION (EC) No 1272/2008:

REGULATION (EC) No 1272/2008	
Hazard classes/Hazard categories	Hazard statement
Eye Irrit. 2	H319

For full text of H- phrases: see section 2.2.

2.2 Label elements:

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Hazard pictogram(s):



Signal word:

Warning

Hazard statement(s):

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 + 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.

Not applicable.

Supplemental Hazard information (EU)

2.3 Other hazards:

The substance is not PBT/vPvB.

The substance is not identified as having endocrine disrupting properties.

Section 3 Composition/information on ingredients

Substance/Mixture:

Substance

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration	Specific Concentration limits, M-Factors, Acute Toxicity Estimates (ATE)
DL-malic acid	17-2119384584-28-0000	617-48-1	210-514-9	≥99.0%	N/A

Section 4 First aid measures

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

4.1.2 In case of skin contact:

Wash off thoroughly with plenty of water. If irritation develops, seek medical attention.

4.1.3 In case of eyes contact:

Wash affected eyes for at least 15 minutes under running water with eyelids held open. Seek medical attention.

4.1.4 In case of ingestion:

Rinse mouth immediately and then drink plenty of water. If large quantities of this material are swallowed, call a physician immediately.

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

Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed: If skin irritation or rash occurs, get medical advice/attention.

Section 5 Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media:

Small fire: use dry chemical powder. Large fire: Use water spray, fog or foam.

Unsuitable extinguishing media:

Do not use water jet.

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5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released: carbon monoxide, carbon dioxide. Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.

5.3 Advice for firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand. MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:

Wear protective equipment. Keep unprotected persons away. Avoid formation of dust. Use respiratory protective device against the effects of fumes/dust/aerosol. Wear protective clothing. Avoid contact with eyes and skin. Wear an appropriate NIOSH/MSHA approved respirator if vapour is generated.

6.1.2 For emergency responders:

6.2 Environmental Precautions:

Do not allow material to be released to the environment without proper governmental permits.

6.3 Methods and material for Containment and Cleaning up:

Clean up spills immediately, using the appropriate protective equipment. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation. Clean up affected area.

6.4 Reference to other sections:

See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

Section 7 Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Use personal protective equipment. Avoid contact with skin and eyes. Avoid breathing dust. Provide appropriate exhaust ventilation at places where dust is formed. Wash hands thoroughly after handling.

7.1.2 Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Keep air tightly in a light-proof, dry and cool place. Store away from incompatible materials such as oxidizing agents, alkalis.

7.2 Conditions for safe storage, including any incompatibilities:

7.3 Specific end use(s):

Not applicable.

Section 8 Exposure Controls/Personal Protection

8.1 Control parameters:

8.1.1 Occupational exposure limits:

Not available.

8.1.2 Additional exposure limits under the conditions of use:

Not available.

8.1.3 DNEL/DMEL and PNEC-Values:

Workers- Hazard via inhalation route	Systemic effects-Long term exposure	ONEL (Derived No Effect Level) 0.33mg/m ³
Workers - Hazard via inhalation route	Systemic effects-Short term exposure	4mg/m ³
Workers - Hazard via inhalation route	Local effects-Long term exposure	NEL (Derived No Effect Level)
Workers- Hazard via inhalation route	Local effects-Short term exposure	Derived No Effect Level 0.04 mg/m ³
Workers- Hazard via dermal route	Systemic effects-Long term exposure	DNEL (Derived No Effect Level) 0.4 mg/kg bw/day
Workers - Hazard via dermal route	Systemic effects-Short term exposure	DNEL (Derived No Effect Level) 40mg/kg bw/day

Workers- Hazard via dermal route	Local effects-Long term exposure	DNEL (Derived No Effect Lev
Workers- Hazard via dermal route	Local effects-Short term exposure	NEL (Derived No Effect Leve
General Population- Hazard via inhalation route	Systemic effects-Long term exposure	
General Population-Hazard via inhalation route	Systemic effects-Short term exposure	2mg/m3
General Population- Hazard via inhalation route	Local effects-Long term exposure	NEL (Derived
General Population - Hazard via inhalation route	Local effects-Short term exposure	
General Population- Hazard via dermal route	Systemic effects-Long term exposure	DNEL (Derived No Effect g/kg bw/day
General Population- Hazard via dermal route	Systemic effects-Short term exposure	NEL (Derived mg/kg bw/day
General Population- Hazard via dermal route	Local effects-Long term exposure	NEL (Derived No Effect .5mg/c m ²
General Population- Hazard via dermal route	Local effects-Short term exposure	
General Population - Hazard via oral route	Systemic effects-Long term exposure	NEL (Derived No effec mg/kg bw/day
General Population- Hazard via oral route	Systemic effects-Short term exposure	NEL (Derived N 20mg/kg bw/day
Hazard for aquatic organisms	Freshwater	
Hazard for aquatic organisms	Marine water	
Hazard for aquatic organisms	STP	

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection:

Safety goggles.

Skin protection

Hand protection:

Handle with gloves. Type of gloves recommended: Nitrile rubber.
Minimum breakthrough time / gloves: 480 min.
Glove thickness: 0.11mm.

Body protection:

Protective clothing. Protective boots, if the situation requires.

Respiratory protection:

Dust respirator.

Thermal hazards:

Wear suitable protective clothing to prevent heat.

8.2.3 Environmental exposure controls:

Avoid discharge into the environment. According to local regulations, Federal and official regulations.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance:	Crystals or crystalline powder
Colour:	White
Odour:	Sour odour
Odour threshold:	Not available
pH:	Acidity

Melting point/range (°C):	131-132°C
Boiling point/range (°C):	150°C (ca.1 atm)
Flash point (°C):	Not available
Evaporation rate:	Not available
Flammability limit -lower (%):	Not available
Flammability (solid, gas):	Non-flammable
Ignition temperature (°C):	Not available
Upper/lower explosive limits:	Not available
Vapour pressure (20°C):	0.00000293 mm Hg (Calc)
Vapour density:	Not available
Relative Density:	1.6012 g/cm ³ (25°C)
Bulk density(kg/m ³):	Not available
Water solubility (g/l):	> 500 g/L (Calc)
n-Octanol/Water (log Po/w):	log Pow=-1.27(24°C)
Auto-ignition temperature:	>150°C
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not available
Explosive properties:	Non-explosive
Oxidising properties:	No oxidizing properties
Molecular Formula:	C ₄ H ₆ O ₅
Molecular Weight:	134.09

9.2. Other information:

Fat solubility(solvent-oil to be specified) etc:	Not available
Surface tension:	Not available
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available
Specific Rotation:	-0.10° ~-0.10°
Arsenic [as As]:	2mg/kg Max
Lead:	2mg/kg Max
Residue on ignition:	0.10% Max
Fumaric Acid:	1.0% Max
Maleic Acid:	0.05% Max
Water-insoluble Matter:	0.1%Max

Section 10 Stability and reactivity

10.1 Reactivity:	The substance is stable under normal storage and handling conditions.
10.2 Chemical stability:	Stable at room temperature in closed containers under normal storage and handling conditions.
10.3 Possibility of hazardous reactions:	No dangerous reactions known.
10.4 Conditions to avoid:	Incompatible materials. Dust generation, excess heat, sources of ignition.
10.5 Incompatible materials:	Oxidizing agents, alkalis.
10.6 Hazardous decomposition products:	Carbon monoxide, carbon dioxide.

Section 11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:

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Acute toxicity:	
LD50(Oral, Rat):	10 700 mg/kg bw
LD50(Dermal, Rabbit):	Not available
LC50(Inhalation, Rat):	> 1.306 mg/L air (analytical), 4h
Skin corrosion/Irritation:	Not classified
Serious eye damage/irritation:	Causes serious eye irritation.
Respiratory or skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
STOT- single exposure:	Not classified
STOT-repeated exposure:	Not classified
Aspiration hazard:	Not classified
11.2 Information on other hazards	
Endocrine disrupting properties	The substance is not identified as having endocrine disrupting properties.
Other information	Not applicable

Section 12 Ecological information

12.1 Toxicity:

Acute (short-term) toxicity:

LC50(96h, Fish):

>100mg/L

LC50(48h, Crustacea):

ca. 240mg/L

EC50(72h, Algae/aquatic plants):

> 100 mg/L

Chronic (long-term) toxicity:

NOEC(Fish):

Not available

NOEC(Crustacea):

Not available

EC50(Algae/aquatic plants):

Not available

12.2 Persistence and degradability:

Readily biodegradable.

12.3 Bioaccumulative potential:

Not available

12.4 Mobility in soil:

Not available

12.5 Results of PBT and vPvB assessment:

The substance is not PBT/vPvB.

12.6 Endocrine disrupting properties:

The substance is not identified as having endocrine disrupting properties.

12.7 Other adverse effects:

Not available.

12.8 Additional information

Not available.

Section 13 Disposal considerations

13.1 Waste treatment methods:

Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

Section 14 Transport information

	Land transport (ADR/RID)	Inland waterways (ADN)	Sea transport (IMDG)	Air transport (ICAO/IATA)
14.1 UN number or ID number	Not regulated	Not regulated	Not regulated	Not regulated
14.2 UN Proper shipping name	Not regulated	Not regulated	Not regulated	Not regulated
14.3 Transport hazard Class(es)	Not regulated	Not regulated	Not regulated	Not regulated
14.4 Packing group	Not regulated	Not regulated	Not regulated	Not regulated
14.5 Environmental hazards	No	No	No	No
14.6 Special precautions for user	See section 2.2	See section 2.2	See section 2.2	See section 2.2
14.7 Maritime transport in bulk according to IMO instruments	Not regulated	Not regulated	Not regulated	Not regulated

Section 15 Regulatory information

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

Relevant information regarding authorization:

Not applicable.

Relevant information regarding restriction:

Not applicable.

Other EU regulations:

Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.

Other National regulations:

Not applicable

15.2 Chemical safety assessment

YES

NO

X

Section 16 Other information

16.1 Indication of changes:

Version 1.0 Amended by (EU) 2020/878

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation for rail International transportation of Dangerous goods

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: Code international maritime dangerous goods code

ICAO: International Civil Aviation Organization

IATA: International Air Transport Association

LC50: median lethal concentration

EC50: The effective concentration of substance that causes 50% of the maximum response.

NOEC: No Observed Effect Concentration

DNEL: derived no-effect level

PNEC: predicted no-effect concentration

16.3 Key literature references and sources for data

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC)1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008		Classification procedure
Eye Irrit.2	H319	On basis of test data

16.5 Relevant H-statements (number and full text):

H319: Causes serious eye irritation.

16.6 Training instructions:

Not applicable.

16.7 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.8 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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