



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.40

Section 1 - Product and Company Information

Product Name	D-MALIC ACID, 100MG, NEAT		
Product Number	46940-U		
Brand	Supelco Chemical		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	800-325-8832	Emergency Phone:	314-776-6555
Fax:	800-325-5052		

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
D(+)-MALIC ACID, UNNATURAL FORM	636-61-3	No	211-262-2	
Formula	C4H6O5			
Synonyms	L(+)-Malic acid			

Section 3 - Hazards Identification

Emergency Overview

Irritant.
Irritating to respiratory system and skin. Risk of serious damage to eyes.

HMIS Rating

Health: 2 Flammability: 0 Reactivity: 0

NFPA Rating

Health: 2 Flammability: 0 Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

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

Dermal Exposure

In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media

Suitable

Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep tightly closed.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment

Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance

Physical State

Solid

Color

White

Form

Powder

Supelco Chemical - 46940-U

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www.sigma-aldrich.com

Molecular Weight 134.09 AMU

pH N/A
BP/BP Range N/A
MP/MP Range 98 °C
Freezing Point N/A
Vapor Pressure N/A
Vapor Density N/A
Saturated Vapor Conc. N/A
SG/Density N/A
Bulk Density N/A
Odor Threshold N/A
Volatile% N/A
VOC Content N/A
Water Content N/A
Solvent Content N/A
Evaporation Rate N/A
Viscosity N/A
Partition Coefficient N/A
Decomposition Temp. N/A
Flash Point °F N/A
Flash Point °C N/A

Explosion Limits N/A

Flammability N/A
Autoignition Temp N/A
Optical Rotation Degree of Rotation +31 - +27 (+/-2)
Solubility N/A

Solvent: Pyridine 55 g/l

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable
Stable
Conditions to Avoid
Heat.

Materials to Avoid

Bases, Oxidizing agents, Reducing agents, Alkali metals

Hazardous Decomposition Products

Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide

Hazardous Polymerization

Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact
Causes skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
Causes severe eye irritation.

Inhalation
Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion

May be harmful if swallowed.

Signs and Symptoms of Exposure

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

RTECS Number: ON7260000

Toxicity Data

Oral - Rat: 5500 mg/kg (LDLO)

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport This substance is considered to be nonhazardous for transport.

IATA

Non-Hazardous for Air Transport Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xi

Indication of Danger

Irritant.

Risk Statements R: 37/38 41

Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Statements S: 26 36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Classification and Label Text

Indication of Danger

Irritant.

Risk Statements

Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection.

United States Regulatory Information

SARA Listed: No

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No
NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. SigmaAldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.