

Malic Acid**SECTION 1. IDENTIFICATION**

Product Identifier	Malic Acid
Other Means of Identification	DL-Hydroxysuccinic acid
Product Code(s)	MA6000
Product Family	Inorganic Solid
Recommended Use	Laboratory and industrial use.
Restrictions on Use	None known.
Supplier Identifier	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
Emergency Phone No.	CANUTEC CANADA, 613-996-6666, 24 Hours
SDS No.	0402
Date of Preparation	February 29, 2016

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Acute toxicity (Oral) - Category 4; Skin irritation - Category 2; Eye irritation - Category 2A; Specific target organ toxicity (single exposure) - Category 3

Label Elements

Signal Word:
Warning

Hazard Statement(s):

Causes skin irritation.
Causes serious eye irritation.

Precautionary Statement(s):**Prevention:**

Wash hands and skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not get in eyes, on skin, or on clothing.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.

Response:

IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of water.

IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

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

Immediately call a POISON CENTRE or doctor.

If skin irritation occurs: Get medical advice/attention.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Disposal:

Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance:

Chemical Name	CAS No.	%	Other Identifiers
MALIC ACID	6915-15-7	> 99	DL-Hydroxysuccinic acid

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor.

Skin Contact

Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If skin irritation occurs, get medical advice or attention.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Immediately call a Poison Centre or doctor.

Ingestion

Do not induce vomiting. Immediately call a Poison Centre or doctor.

First-aid Comments

All first aid procedures should be periodically reviewed by a doctor familiar with the material and its condition of use in the workplace.

Most Important Symptoms and Effects, Acute and Delayed

If in eyes: may cause moderate to severe irritation.

Immediate Medical Attention and Special Treatment

Special Instructions

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Combustible dust. May form combustible dust concentration in air.

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In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide. Maleic Anhydride.

Special Protective Equipment and Precautions for Fire-fighters

Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Knock down vapours or gases with water fog or fine water spray. Dust explosion hazard. Use water spray or fog to prevent dust formation and minimize risk of explosion.

A full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources if safe to do so. Remove or isolate incompatible materials as well as other hazardous materials.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Avoid generating dust. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment to avoid direct contact with this chemical. Do not get in eyes, on skin or on clothing. Do not breathe in this product. Avoid generating dusts. Avoid generating vapours or mists. Only use where there is adequate ventilation. Prevent accidental contact with incompatible chemicals.

Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity). Store in a closed container. Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
MALIC ACID	Not established	Not established	Not established	Not established		

Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Basic Physical and Chemical Properties

Appearance	White powder.
Odour	Odourless
Odour Threshold	Not available
pH	1.95 (5% solution)
Melting Point/Freezing Point	130 °C (266 °F) (melting); 130 °C (266 °F) (freezing)
Initial Boiling Point/Range	Not available
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); 0.091% (lower)
Vapour Pressure	< 0.1 mm Hg at 20 °C
Vapour Density (air = 1)	4.6
Relative Density (water = 1)	1.601
Solubility	Soluble in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	339 °C (642 °F)
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)
Other Information	
Physical State	Solid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

High temperatures. Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid), strong bases (e.g. sodium hydroxide), amines (e.g. triethylamine), metals (e.g. aluminum).

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Skin contact; inhalation; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
MALIC ACID	Not available	1600-3200 mg/kg (mouse)	Not available

Skin Corrosion/Irritation

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May cause mild irritation based on information for closely related chemicals.

Serious Eye Damage/Irritation

May cause serious eye irritation based on information for closely related materials.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

No information was located.

Ingestion

No information was located.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

No information was located.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
MALIC ACID	Not Listed			

Reproductive Toxicity

Development of Offspring

No information was located.

Sexual Function and Fertility

No information was located.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

No information was located.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of contents and container in accordance with local, regional, national and international regulations.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations.

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Listed on the DSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

NFPA Rating	Health - 2	Flammability - 1	Instability - 0
SDS Prepared By	Alphachem Limited		
Phone No.	(905)-821-2995		
Date of Preparation	February 29, 2016		
Date of Last Revision	April 04, 2016		
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). Bartek Ingredients Inc database.		
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