

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Malic acid

Company : **Swadesh Life Science**
H-103, Sumel 7, Near Soni ni chali
BRTS, Rakhiyal
Ahmedabad, Gujarat, India

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Harmful by ingestion., Harmful by skin absorption., Skin sensitiser, Irritant

GHS Classification

Acute toxicity, Oral (Category 4)

Acute toxicity, Dermal (Category 4)

Skin irritation (Category 2)

Serious eye damage (Category 1)

Skin sensitisation (Category 1)

Specific target organ toxicity - single exposure (Category 3) Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s) H302

+ H312 Harmful if swallowed or in contact with skin

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H401 Toxic to aquatic life.

P305 + P351 + P338 Wear protective gloves/ eye protection/ face protection.

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

HMIS Classification Health

hazard: 2 0

Flammability: 0

Physical hazards: 0

NFPA Rating

Health hazard: 2

MATERIAL SAFETY DATA SHEET

Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin Harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Toxilic acid cis-
Butenedioic acid

Formula : C₄H₄O₄
Molecular Weight : 116.07 g/mol

Component	
Maleic acid	
CAS-No.	110-16-7
EC-No.	203-742-5
Index-No.	607-095-00-3

4. FIRST AID MEASURES

General advice

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

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability Not flammable
or combustible.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Dust explosion class: St2

Conditions for safe storage

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

Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

MATERIAL SAFETY DATA SHEET

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	powder
Colour Safety	white
pH	no data available
Melting point/freezing point	Melting point/range: 137 - 140 °C (279 - 284 °F) - lit.
Boiling point	160 °C (320 °F)
Flash point	127 °C (261 °F) - closed cup
Ignition temperature	no data available
Auto-ignition temperature	no data available
Lower explosion limit	2.7 %(V)
Vapour pressure	no data available

MATERIAL SAFETY DATA SHEET

Density	1.59 g/cm ³ at 25 °C (77 °F)
Water solubility	788 g/l at 20 °C (68 °F)
Partition coefficient: n- log Pow:	-0.48 octanol/water
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions no data available

Conditions to avoid no data available

Materials to avoid

Oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

LD50 Oral - rat - 708 mg/kg

Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Muscle weakness. Gastrointestinal:Ulceration or bleeding from stomach.

Inhalation LC50

LC50 Inhalation - rat - 1 h - > 720 mg/m³

Dermal LD50

LD50 Dermal - rabbit - 1,560 mg/kg Remarks: Behavioral:Tremor.

Other information on acute toxicity no data available

Skin corrosion/irritation

Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/eye irritation Eyes - rabbit - Severe eye irritation

Respiratory or skin sensitisation

no data available

Carcinogenicity

- IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Specific target organ toxicity - single exposure (Globally Harmonized System)

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion Harmful if swallowed.

Skin Harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Signs and Symptoms of Exposure Gastrointestinal disturbance

Synergistic effects no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 5 mg/l - 96 h

LC0 - Lepomis macrochirus (Bluegill) - > 300 mg/l - 96 h

Toxicity to daphnia EC100 - Daphnia magna (Water flea) - 160 - 400 mg/l - 48 h and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 160 - 400 mg/l - 48 h

EC100 - Daphnia magna (Water flea) - 200 mg/l - 24 h

EC50 - Desmodesmus subspicatus (green algae) - 41 mg/l - 72 h

Persistence and degradability Toxicity to algae

Bioaccumulative potential

Bioaccumulation

Leuciscus idus melanotus - 3 d

Bioconcentration factor (BCF): < 10

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging Dispose of as unused product.