

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Maleic Acid
CAS number	110-16-7
Synonyms	cis-Butenedioic acid

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

Identified uses	Laboratory chemicals.
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC


SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

- Acute oral toxicity (Category 4)
- Acute dermal toxicity (Category 4)
- Skin Corrosion/Irritation (Category 1B)
- Serious Eye Damage/Eye Irritation (Category 1)
- Skin Sensitization (Category 1)
- Specific target organ toxicity - single exposure (Category 3)
- Target Organs - Respiratory system.

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Danger.
Hazard statements	Causes severe skin burns and eye damage May cause respiratory irritation May cause an allergic skin reaction Harmful if swallowed or in contact with skin
Precautionary statements	Wash face, hands and any exposed skin thoroughly after handling Do not eat, drink or smoke when using this product Wear protective gloves/protective clothing/eye protection/face protection Do not breathe dust/fume/gas/mist/vapors/spray Contaminated work clothing should not be allowed out of the workplace Use only outdoors or in a well-ventilated area Immediately call a POISON CENTER or doctor/physician IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Wash contaminated clothing before reuse IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower If skin irritation or rash occurs: Get medical advice/attention IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Rinse mouth Do NOT induce vomiting Store locked up Store in a well-ventilated place. Keep container tightly closed Dispose of contents/container to an approved waste disposal plant

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Maleic Acid	cis-Butenedioic acid	110-16-7	> 98%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

- If inhaled** Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- In case of skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.
- In case of eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.
- If swallowed** Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

4.3 Indication of any immediate medical attention and special treatment needed

Note to Physician: Treat Symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** Water spray. Carbon dioxide (CO₂). Dry chemical. Chemical foam. CO₂, dry chemical, dry sand, alcohol-resistant foam.
- Unsuitable extinguishing media** No information available.

5.2 Specific hazards arising from the substance or mixture

The product causes burns of eyes, skin, and mucous membranes.

5.3 Special protective equipment and precautions for firefighters

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

5.4 Further information

Flash Point 127 °C / 260.6 °F

Autoignition Temperature Not applicable.

Explosion limits

Upper No information available.

Lower No information available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
3	1	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes, or clothing.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatibilities

Bases. Strong oxidizing agents. Reducing Agent.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

8.2 Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight sealing safety goggles.

Skin protection

Wear appropriate protective gloves.

Body Protection

Wear appropriate clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure

Do not let product enter the drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Solid
Appearance	White
Odor	Irritating
Odor Threshold	No information available.
pH	1.3 10% aq.solution
Melting Point/Range	134 - 138 °C / 273.2 - 280.4 °F

Boiling Point/Range	No information available.
Evaporation Rate	Not applicable.
Flammability (solid)	No information available.
Flammability or explosive limit	
Upper	No information available.
Lower	No information available.
Vapor Pressure	No information available.
Vapor Density	Not applicable.
Density	No information available.
Solubility	790 g/L water (25 °C)
Partition coefficient; n-octanol/water	No information available.
Autoignition Temp	Not applicable.
Decomposition Temp	> 135 °C
Viscosity	Not applicable.
Molecular Formula	C4H4O4
Molecular Weight	116.07
VOC Content(%)	No information available.
Oxidizing properties	No information available.

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

None known, based on information available.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None under normal conditions.

10.4 Conditions to avoid

Incompatible products. Exposure to moist air or water.

10.5 Incompatible materials

Bases, Strong oxidizing agents, Reducing Agent.

10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Maleic Acid	708 mg/kg (rat)	1560 mg/kg (rabbit)	> 720 mg/m ³ (rat)

Skin corrosion/irritation

Causes severe burns by all exposure routes.

Serious eye damage/eye irritation

Causes severe burns by all exposure routes.

Respiratory or skin sensitization

May cause sensitization by skin contact.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Maleic Acid	110-16-7	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

Respiratory system.

Specific target organ toxicity - repeated exposure

None known.

Reproductive toxicity

No information available.

Chronic effects

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results
Maleic Acid	LC50	Pimephales promelas	5 mg/L 96 h
	EC50	Daphnia magna	250-400 mg/L 48 h

12.2 Persistence and degradability

Persistence is unlikely.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Will likely be mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-no	UN3261
Proper Shipping Name	Corrosive solid, acidic, organic, n.o.s (Maleic acid)
Hazard Class	8
Packing Group	II

IMDG

UN-no	UN3261
Proper Shipping Name	Corrosive solid, acidic, organic, n.o.s (Maleic acid)
Hazard Class	8
Packing Group	II

IATA

UN-no	UN3261
Proper Shipping Name	Corrosive solid, acidic, organic, n.o.s (Maleic acid)
Hazard Class	8
Packing Group	II

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed. Component: Maleic acid; RQ: 5000 lb

SARA 304 Emergency release notification

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Listed. See section 2 for more information.

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Listed.

US. New Jersey Worker and Community Right-to-Know Act

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law
Listed.

California Proposition 65
Not listed.

SECTION 16: Other information

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SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.