

Material Safety Data Sheet

Fumaric Acid

ACC# 10150

Section 1 - Chemical Product and Company Identification

MSDS Name: Fumaric Acid

Catalog Numbers: S80021, A120-500, SRS950 500, SRS950500

Synonyms: Allomaleic Acid; trans-Butanedioic Acid; 1,2-Ethylenedicarboxylic Acid, 2-butanedioic acid.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-17-8	FUMARIC ACID	app.100	203-743-0

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid.

Caution! Causes eye irritation. May cause respiratory and digestive tract irritation. May cause skin irritation. May cause kidney damage. The toxicological properties of this material have not been fully investigated.

Target Organs: Kidneys, eyes.

Potential Health Effects

Eye: Contact may cause transient eye irritation. Exposure to solid may cause pain and redness.

Skin: May cause skin irritation. May be absorbed through the skin.

Ingestion: May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. Exposure may cause gastrointestinal disturbances and kidney

Inhalation: May cause respiratory tract irritation. May cause effects similar to those described for ingestion. The toxicological properties of this substance have not been fully investigated.

Chronic: Not available.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes.

Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

Flash Point: Not applicable.

Autoignition Temperature: 1364 deg F (740.00 deg C)

Explosion Limits, Lower:N/A

Upper: N/A

NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs

FUMARIC ACID

none listed

none listed

none listed

OSHA Vacated PELs: FUMARIC ACID: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: 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.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: white

Odor: none reported

pH: Not available.

Vapor Pressure: 1.7 mm Hg @ 165 deg C

Vapor Density: Not available.

Evaporation Rate: Negligible

Viscosity: Not available.

Boiling Point: 329 deg F

Freezing/Melting Point: 549 deg F

Decomposition Temperature: 329 deg F

Solubility: Slightly soluble in water.

Specific Gravity/Density: 1.635 (water=1)

Molecular Formula: C₄H₄O₄

Molecular Weight: 116.0256

Section 10 - Stability and Reactivity

Chemical Stability: Stable. However, may decompose if heated.

Conditions to Avoid: Incompatible materials, dust generation, temperatures above 190°C.

Incompatibilities with Other Materials: Amines, bases, oxidizers, reducing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:

CAS# 110-17-8: LS9625000

LD50/LC50:

CAS# 110-17-8:

Draize test, rabbit, eye: 100 mg/24H Moderate;

Draize test, rabbit, skin: 500 mg/24H Mild;

Oral, rat: LD50 = 9300 mg/kg;

Carcinogenicity:

CAS# 110-17-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Neurotoxicity: No information available.

Mutagenicity: Please refer to RTECS# LS9625000 for specific information.

Other Studies: None.

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information reported.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not regulated as a hazardous material	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 110-17-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 110-17-8: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 110-17-8 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 110-17-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI

Risk Phrases:

R 36 Irritating to eyes.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

CAS# 110-17-8: 1

Canada - DSL/NDSL

CAS# 110-17-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B.

Canadian Ingredient Disclosure List

CAS# 110-17-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/12/1997

Revision #2 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.