



Alpha Chemika



ISO 9001 QUALITY SYSTEM CERTIFIED ORGANIZATION

MATERIAL SAFETY DATA SHEET

MSDS

Savgan Heights ; 102 ,B Wing ; R.T.O. Lane ,Andheri (West) Mumbai - 400053 , INDIA

Section 1 - Chemical Product and Company Identification

Product Name : FUMARIC ACID

Synonyms: 2-Butenedioic acid; trans-1,2-ethylenedicarboxylic acid; allomaleic acid

CAS No.: 110-17-8

Molecular Weight: 116.07

Chemical Formula: C₄H₄O₄

Section 2 - Composition, Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Fumaric Acid	110-17-8	100%	Yes

Section 3 - Hazardous Identification

Emergency Overview

WARNING! CAUSES EYE IRRITATION. MAY BE HARMFUL IF INHALED. MAY CAUSE IRRITATION TO SKIN AND RESPIRATORY TRACT.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

Flammability Rating: 1 - Slight

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

Inhalation of dust may cause irritation. Symptoms may include coughing, sneezing, and breathing difficulty.

Ingestion:

Fumaric acid is a food additive with comparatively low toxicity. In large amounts (several grams) it may be expected to cause some gastrointestinal disturbance with nausea, vomiting and diarrhea.

Skin Contact:

Irritant due to its acidic nature. May cause inflammation and pain on prolonged contact, especially with moist skin.

Eye Contact:

Irritant. Can cause redness, tearing and pain. Crystals may be temporarily abrasive as well.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

Section 4 - First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Section 5 - Fire Fighting Measures

Fire:

Flash point: 273C (523F) OC

Autoignition temperature: 740C (1364F)

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Section 6 - Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

Section 7 - Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Section 8 - Exposure Controls, Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 - Physical and Chemical Properties

Appearance:

White crystals.

Odor:

Odorless.

Solubility:

0.63g in 100g of water at 25C (77F).

Specific Gravity:

1.64 @ 20C/4C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

No information found.

Boiling Point:

200C (392F) Sublimes.

Melting Point:

287C (549F) (capillary).

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

10 @ 0C (32F)

Evaporation Rate (BuAc=1):

No information found.

Section 10 - Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition. May also form irritating fumes of maleic anhydride.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

Section 11 - Toxicological Information

Oral rat LD50: 9300 mg/kg. Irritation data, standard Draize, eye rabbit: 100 mg/24H moderate; standard Draize, skin rabbit: 500 mg/24H mild. Investigated as a mutagen.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Fumaric Acid (110-17-8)	No	No	None

Section 12 - Ecological Information

Environmental Fate:

When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material is expected to readily biodegrade. When released into water, this material is expected to have a half-life between 10 and 30 days. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition.

Environmental Toxicity:

No information found.

Section 13 - Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14 - Transport Information

Not Regulated

Section 15 - Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Fumaric Acid (110-17-8)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

--Canada--
Ingredient Korea DSL NDSL Phil.

Fumaric Acid (110-17-8) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----

-SARA 302- -----SARA 313-----
Ingredient RQ TPQ List Chemical Catg.

Fumaric Acid (110-17-8) No No No No

-----\Federal, State & International Regulations - Part 2\-----

-RCRA- -TSCA-
Ingredient CERCLA 261.33 8(d)

Fumaric Acid (110-17-8) 5000 No No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Section 16 - Additional Information

NFPA Ratings: Health: **1** Flammability: **1** Reactivity: **0**

Label Hazard Warning:

WARNING! CAUSES EYE IRRITATION. MAY BE HARMFUL IF INHALED. MAY CAUSE IRRITATION TO SKIN AND RESPIRATORY TRACT.

Label Precautions:

Avoid contact with eyes, skin and clothing.

Wash thoroughly after handling.

Avoid breathing dust.

Keep container closed.

Use with adequate ventilation.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.