

Section 1. Product and Company Identification

Product Name Fumaric Acid
CAS Number 110-17-8

Parchem - fine & specialty chemicals
415 Huguenot Street
New Rochelle, NY 10801
☎ (914) 654-6800 ☎ (914) 654-6899
🌐 parchem.com ✉ info@parchem.com

EMERGENCY RESPONSE NUMBER
CHEMTEL
Toll Free US & Canada: 1 (800) 255-3924
All other Origins: 1 (813) 248-0585
Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Eye irritation (Category 2A): H319

GHS Label Elements
Pictograms:



Signal word: WARNING

Hazard and precautionary statements
Hazard statements

H319: Causes serious eye irritation.

Precautionary statements

P264: Wash skin thoroughly after handling.

P280: Wear eye protection/ face protection.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313: If eye irritation persists: Get medical advice/ attention.

Hazards not otherwise classified (HNOC) or not covered by GHS: None



Section 3. Composition / Information on Ingredients

Common Name Fumaric Acid
Synonym(s) 2-Butenedioic acid
Formula C₄H₄O₄
CAS Number 110-17-8

COMPONENT	CAS NUMBER	CONCENTRATION
Fumaric Acid	110-17-8	≤ 100%

Section 4. First Aid Measures

Description of first-aid measures

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

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

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

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

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

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed: No data available

Section 5. Firefighting Measures

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Special hazards arising from the substance or mixture: Carbon oxides

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: No data available

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8.

Environmental precautions: Do not let product enter drains.



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

Reference to other sections: For disposal see section 13.

Section 7. Handling and Storage

Precautions for safe handling: Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): Non Combustible Solids

Section 8. Exposure Controls / Personal Protection

Control parameters

Components with workplace control parameters: Contains no substances with occupational exposure limit values.

Exposure controls

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

Personal protective equipment

Eye/face protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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.

Body Protection: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace

Respiratory protection: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure: Do not let product enter drains

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance: solid

Odor: No data available

Odor Threshold: No data available

pH: 2.1 at 4.9 g/l at 20°C (68°F)

Melting point/freezing point: Melting point/range: 298 - 300°C (568 - 572°F)

Initial boiling point and boiling range: No data available

Flash point: 230°C (446°F) - closed cup - DIN 51755 Part 1

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits

Upper explosion limit: 40% (V)

Lower explosion limit: 3% (V)

Vapor pressure: 2.2 hPa (1.7 mmHg) at 165°C (329°F)

Vapor density: No data available

Relative density: 1.635 g/cm³ at 20°C (68°F)

Water solubility: 7 g/l at 25°C (77°F) - soluble

Partition coefficient: n-octanol/water: log Pow: 0.46 at 20°C (68°F)

Auto-ignition temperature: ca.399°C (750°F) at 1,013.0 hPa (759.8 mmHg)

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Other safety information: No data available

Section 10. Stability and Reactivity

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No data available

Conditions to avoid: No data available

Incompatible materials: Oxidizing agents, Amines, Strong bases

Hazardous decomposition products

Other decomposition products: No data available

In the event of fire: see section 5

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral: Rat - female - 9,300 mg/kg (OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal: Rabbit - female - 20,000 mg/kg (OECD Test Guideline 402)

LD50 Intraperitoneal: Mouse - 100 mg/kg

Skin corrosion/irritation

Skin: Rabbit

Result: Mild skin irritation - 4 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes: Rabbit

Result: Irritating to eyes. (OECD Test Guideline 405)

Respiratory or skin sensitization

Maximization Test (GPMT): Guinea pig

Result: Does not cause skin sensitization. (OECD Test Guideline 406)

Germ cell mutagenicity

Mouse: lymphocyte

Result: negative

Carcinogenicity

IARC: No components 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 components 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 components 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 components of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available

Additional Information

Repeated dose toxicity: Rat - male - Oral - NOAEL: 600 mg/kg

RTECS: LS9625000



Gastrointestinal disturbance, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Stomach - Irregularities - Based on Human Evidence

Section 12. Ecological Information

Toxicity

Toxicity to fish

Semi-static test LC50: Danio rerio (zebra fish): > 100 mg/l (96 h) (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

Immobilization EC50: Daphnia magna (Water flea): 212 mg/l (48 h) (OECD Test Guideline 202)

Toxicity to algae

Growth inhibition EC50: Pseudokirchneriella subcapitata: > 100 mg/l (72 h) (OECD Test Guideline 201)

Toxicity to bacteria

Respiration inhibition EC50: activated sludge: > 300 mg/l (3 h) (OECD Test Guideline 209)

Persistence and degradability

Biodegradability

Aerobic: Exposure time 28 d

Result: 67.5 % - Readily biodegradable (OECD Test Guideline 301B)

Bioaccumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: No data available

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

DOT (US)

UN number: 3077

Class: 9

Packing group: III

Proper shipping name: Environmentally Hazardous Substances, Solid, N.O.S. (Fumaric acid)



Reportable Quantity (RQ): 5000 lbs
Poison Inhalation Hazard: No

IMDG: Not dangerous goods
IATA: Not dangerous goods

Section 15. Regulatory Information

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components

Fumaric acid (CAS-No. 110-17-8)

Pennsylvania Right to Know Components

Fumaric acid (CAS-No. 110-17-8)

New Jersey Right to Know Components

Fumaric acid (CAS-No. 110-17-8)

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

HMIS Rating

Health hazard: 2*

Flammability: 1

Physical Hazard: 0

NFPA Rating

Health hazard: 2

Fire Hazard: 1

Reactivity Hazard: 0

Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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