



The Chemical Company
19 Narragansett Avenue
Jamestown, RI 02835
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Material Safety Data Sheet

Product Name Fumaric Acid

1. Supplier and Substance Identification

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Chemical Name Fumaric Acid

Molecular Formula C₄H₄O₄

Molecular Weight 116.07

Synonyms Trans-2-butenedioic acid, (E)-Butenedioic acid, 2-butenedioic acid

2. Composition /Information on ingredients

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Content (W/W)</u>	<u>EINECS</u>
Fumaric Acid	110-17-8	More than 99.5%	203-743-0
Maleic Acid	110-16-7	Less than 0.05%	203-742-5

3. Hazard Identification

Hazard Symbol Xi - Irritant

R-Phrases R36

S-Phrases S2, S26

4. First Aid Measures

Inhalation Remove the affected individual to fresh air and medical attention required.

Skin Contact Remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

Eyes In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

5. Fire Fighting Measures

Explosive Hazard This material may form flammable dust-air mixtures when finely divided. Prevent dust build-up by providing adequate ventilation.

Means of Extinction Water, carbon dioxide, dry chemicals, wear self-contained breathing apparatus.

Hazardous Combustion Products Toxic fumes of carbon monoxide, carbon dioxide.

Protection of Firefighters Should wear proper protective equipment and self-contained breathing apparatus.

6. Accidental Release Measures

Personal precautions Avoid Inhalation. Use personal protective equipment. Ensure adequate ventilation.

Environmental precautions Remove all sources of ignition. Avoid discharge into environment

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Methods for cleaning up Use mechanical handling equipment. Avoid raising dust. Flush with plenty of water.
Dispose of in compliance with local and national regulations.

7. Handling and Storage

Handling

General advice Ensure thorough ventilation of stores and work areas. Take precautionary measures against static discharges. Keep away from sources of ignition - No smoking

Protection against Fire and explosion Avoid dust formation. Dust can form an explosive mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Electrical devices must meet the specified temperature class.

Storage

General advice Protect against moisture. Containers should be stored tightly sealed in a dry place.

8. Exposure Controls/Personal Protection

National Occupational exposure limits None assigned

Engineering measures Ensure adequate ventilation, well grounded protected electrical equipment.

Respiratory Self contained breathing apparatus

Eye Closely fitted Safety goggles.

Hand Impervious Gloves

Skin and body Approved work boots, protective clothing

Hygiene measure Wash hands during break and at the end of the work

Other devices Maintain eye wash facility in work area

9. Physical and Chemical Properties

Form	Power
Odor	odorless
Color	White
Melting Point ° C	287
Boiling Point ° C	290 (sublimes)
Vapor Pressure mm Hg at 25° C	1.54 X 10 ⁻⁴
Water Solubility g/l at 25° C	7
Density g/cm ³ at 25° C	1.635

10. Stability and Reactivity

Stability Stable at normal temperatures.

Conditions to Avoid Temperatures over 190° C and moisture.

Materials to Avoid Strong oxidants, strong bases, alkali metals, amines, and Carbonates.

Decomposition Products Maleic Acid, Maleic Anhydride, Carbon Monoxide, and Carbon Dioxide.

11. Toxicological Information

Acute toxicity (lethal doses)
(Literature value)

LD50/oral/ rat	9.3 g/kg
LD50/oral/ rat	1.0 g/kg
LD50/dermal/mouse	>20 g/kg

12. Ecological Information

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