



<b>NFPA</b> 	<b>HCS Risk Phrases</b> <b>HCS CLASS:</b> R36 Irritating to eyes	<b>Protective Clothing</b> 
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### Section I. Chemical Product and Company Identification

Common Name/ Trade Name	<b>FUMARIC ACID</b>	Revision Date: 11-20-06
Supplier	FRITZ INDUSTRIES, INC. 500 SAM HOUSTON ROAD MESQUITE, TX 75149 (972) 285-5471 (800) 955-1323	In Case of Emergency. (800) 424-9300 Week Days: (972) 285-5471 (800) 955-1323
Chemical Family	Organic acid	

### Section II. Composition and Information on Ingredients

Name	CAS #	% by Weight	TLV/PEL	LC <sub>50</sub> /LD <sub>50</sub>
Fumaric Acid	110-17-8	>99	N/A	LD <sub>50</sub> = 9300 mg/kg (oral, rat)

### Section III. Hazards Identification

Emergency overview	Causes eye irritation. May cause skin and respiratory tract irritation
Target organs	Eyes
Eye contact	Causes moderate eye irritation
Skin	Causes mild skin irritation
Inhalation	Inhalation of dust may cause respiratory tract irritation
Ingestion	No hazard expected in normal industrial use.
Chronic exposure	Not expected to be a chronic hazard.

### Section IV. First Aid Measures

Eye Contact	Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek medical aid immediately.
Skin Contact	Immediately 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. Wash clothing before reuse.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Ingestion	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid immediately.




### Section V. Fire and Explosion Data

General information	Wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.
Autoignition temperature	375°C (707°F)
Flash point	N/A
Explosion limits	N/A
Fire Fighting Media and Instructions	Use water fog, dry chemical, carbon dioxide, or regular foam.

### Section VI. Accidental Release Measures

Leak/Spill	Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.
General Information	Use proper personal protective equipment as indicated in Section 8.

FUMARIC ACID

Section VII. 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 eyes, skin, and clothing. Avoid breathing dust.											
Storage	Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.											
Section VIII. Exposure Controls/Personal Protection												
Engineering Controls	Use adequate ventilation to keep airborne concentrations low.											
Personal Protection	Wear chemical splash goggles and face shield. Wear gloves to prevent skin exposure. Wear appropriate protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.											
Section IX. Physical and Chemical Properties												
Physical state and Appearance	Solid Odor Odorless Color White											
Specific Gravity	1.625 Freezing/Melting Point 287°C											
Solubility	0.63g/100g @ 25°C											
Section X. Stability and Reactivity Data												
Chemical Stability	Stable; however, may decompose if heated. May polymerize.											
Incompatibility with Various Substances	Strong oxidizing agents, strong reducing agents, strong bases, amines.											
Conditions to Avoid	Dust generation, temperatures above 190°C; corrosive to aluminum in aqueous solution.											
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide.											
Hazardous Polymerization	May occur.											
Section XI. Toxicological Information												
Primary Routes of Exposure	Eyes, skin, inhalation.											
Toxic Effects on Humans	Causes eye irritation. May cause skin and respiratory irritation											
Special Remarks on other Toxic Effects on Humans	None											
Section XIII. Disposal Considerations												
RCRA P-Series	None listed.											
RCRA U-Series	None listed.											
Section XIV. Transport Information												
DOT Classification	Not regulated											
Section XV. Other Regulatory Information and Pictograms												
Other Classifications	WHMIS (Canada) Classification D2B Canadian DSL Inventory Status CAS# 110-17-8 is listed on Canada's DSL List.											
HMIS (U.S.A.)	<table border="0"> <tr> <td style="background-color: blue; color: white; padding: 2px;">1 HEALTH</td> <td rowspan="4" style="vertical-align: middle; padding: 0 10px;">National Fire Protection Association (U.S.A.)</td> <td rowspan="4" style="vertical-align: middle; padding: 0 10px;">Health</td> <td rowspan="4" style="text-align: center;">  </td> <td style="padding: 2px;">Fire Hazard</td> </tr> <tr> <td style="background-color: red; color: white; padding: 2px;">1 FLAMMABILITY</td> <td style="padding: 2px;">Reactivity</td> </tr> <tr> <td style="background-color: yellow; color: black; padding: 2px;">1 REACTIVITY</td> <td style="padding: 2px;">Specific Hazard</td> </tr> <tr> <td style="padding: 2px;">(e) PROTECTIVE EQUIPMENT</td> <td></td> </tr> </table>	1 HEALTH	National Fire Protection Association (U.S.A.)	Health		Fire Hazard	1 FLAMMABILITY	Reactivity	1 REACTIVITY	Specific Hazard	(e) PROTECTIVE EQUIPMENT	
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Section XVI. Other Information												
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