

## SAFETY DATA SHEET

Section 1: Identification	
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<b>Material</b>	Dimethyl fumarate
Product Name	Dimethyl Fumarate Capsules 120mg/240mg
<b>CAT No.</b>	AC222180000; AC222180250; AC222181000; AC222185000
<b>Synonyms</b>	Allomaleic Acid Dimethyl Ester; Fumaric Acid; Dimethyl Ester
<b>Recommended Use</b>	Laboratory chemicals
<b>Uses Advised Against</b>	Food, drug, pesticide or biocidal product use.
<b>Distributor</b>	SOLA Pharmaceuticals 655 Highlandia Drive, Ste B Baton Rouge, LA. 70810 Tel: 866.747.7365 Fax: 800.754.9550 <a href="http://www.solameds.us">www.solameds.us</a> info@solameds.us
<b>NDC Number</b>	70512-852-14 (120mg 14's) 70512-853-60 (240mg 60'S)
Section 2: Hazard(s) Identification	
<b>Section 2, Hazard(s) Identification</b>	
<b>Classification</b>	
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).	
Acute dermal toxicity	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target organs – Respiratory system	
<b>Label Elements</b>	
<b>Signal Word</b>	
Warning	
<b>Hazard Statements</b>	
Harmful in contact with skin	
Causes skin irritation	

Causes serious eye irritation  
 May cause an allergic skin reaction  
 May cause respiratory irritation

**Precautionary Statements**

**Prevention**

Wear protective gloves/protective clothing/eye protection/face protection  
 Wash face, hands and any exposed skin thoroughly after handling  
 Avoid breathing dust/fume/gas/mist/vapors/spray  
 Contaminated work clothing should not be allowed out of the workplace  
 Use only outdoors in a well-ventilated area

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Call a POISON CENTER or doctor/physician if you feel unwell

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
 Call a POISON CENTER or doctor/physician if you feel unwell  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If eye irritation persists, get medical advice/attention

**Storage**

Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.

**Disposal**

Dispose of contents/container to an approved waste disposal plant.

**Hazards Not Otherwise Classified (HNOC)**

None identified.

**Section 3: Composition/Information on Ingredients**

**Section 3, Composition/Information on Ingredients**

Component	CAS No.	Weight %
2-Butenedioic acid (E)-, dimethyl ester	624-49-7	>95

**Section 4: First-Aid Measures**

**Section 4, First-Aid Measures**

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.
<b>Inhalation</b>	Remove to fresh air. Do not use mouth-to-mouth if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Most important symptoms And effects</b>	May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.
<b>Notes to Physician</b>	Treat symptomatically.

**Section 5: Fire-Fighting Measures**

**Section 5, Fire-Fighting Measures**

<b>Suitable Extinguishing Media</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	No information available
<b>Method</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

**Specific Hazards Arising from the Chemical**  
 Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**  
 Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**Protective Equipment and Precautions for Firefighters**  
 As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical Hazards</b>
2	1	0	N/A

Section 6: Accidental Release Measures	
<b>Section 6, Accidental Release Measures</b>	
<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.
<b>Environmental Precautions</b>	Should not be released into the environment. See Section 12 for additional Ecological Information.
<b>Methods for Containment And Clean Up</b>	Sweep up and shovel into suitable containers for disposal. Avoid dust formation.
Section 7: Handling and Storage	
<b>Section 7, Handling and Storage</b>	
<b>Handling</b>	Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Acids. Bases. Reducing Agent. Oxidizing agent.
Section 8: Exposure Controls / Personal Protection	
<b>Section 8, Exposure Controls / Personal Protection</b>	
<b>Exposure Guidelines</b>	This product not not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
<b>Engineering Measures</b>	Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.
<b>Personal Protective Equipment</b>	
<b>Eye/Face Protection</b>	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 EN 166.
<b>Skin and Body Protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respiratory regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149-approved respirator if exposure limits are exceeded or irritation or other symptoms are experienced.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.
Section 9: Physical and Chemical Properties	
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<b>Physical State</b>	Solid
<b>Appearance</b>	White
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available

<b>pH</b>	4.0 – 6.0 @ 20°C 1% susp
<b>Melting Point/Range</b>	102 – 105°C / 215.6 – 221°F
<b>Boiling Point/Range</b>	192 – 193°C / 377.6 – 379.4°F @ 760mmHg
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	No information available
<b>Vapor Density</b>	Not applicable
<b>Specific Gravity</b>	No information available
<b>Solubility</b>	No information available
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	Not applicable
<b>Molecular Formula</b>	C6 H8 O4
<b>Molecular Weight</b>	144.13

### Section 10: Stability and Reactivity

#### Section 10, Stability and Reactivity

<b>Reactive Hazard</b>	None known, based on information available.
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Avoid dust formation.
<b>Incompatible Materials</b>	Acids, Bases, Reducing Agent, Oxidizing Agent
<b>Hazardous Decomposition Products</b>	Carbon Monoxide (CO), Carbon Dioxide (CO <sub>2</sub> )
<b>Hazardous Polymerization</b>	No information available.
<b>Hazardous Reactions</b>	None under normal processing

### Section 11: Toxicological Information

#### Section 11, Toxicological Information

##### Acute Toxicity

##### Product Information

##### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Butenedioic Acid (E)-, dimethyl ester	LD50: 240mg/kg (Rat)	LD50 = 1259mg/kg (Rabbit)	Not listed

**Toxicologically Synergistic**      No information available

**Products**

**Delayed and Immediate Effects As Well As Chronic Effects From Short and Long-Term Exposure**

**Irritation** No information available

**Sensitization** May cause sensitization by skin contact

**Carcinogenicity** The table below indicates whether each Agency has listed any ingredient as a carcinogen.

Component	CAS No.	IARC	NTP	ACGIH	OSHA	Mexico
2-Butenedioic Acid (E)-, dimethyl ester	624-49-7	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available

**Reproductive Effects** No information available

**Developmental Effects** No information available

**Teratogenicity** No information available

**STOT – single exposure** Respiratory system

**STOT – repeated exposure** None known

**Aspiration Hazard** No information available

**Symptoms/effects, Both Acute and Delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest Pain, muscle pain or flushing

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated

**Section 12: Ecological Information**

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**Ecotoxicity**

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
2-Butenedioic Acid (E)-, dimethyl ester	Not listed	Not listed	Not listed	EC50: 1.2mg/L/48h

**Persistence and Degradability** Persistence is unlikely.

<b>Bioaccumulation/Accumulation</b>	No information available																						
<b>Mobility</b>	Will likely be mobile in the environment due to its water solubility.																						
<b>Section 13: Disposal Considerations</b>																							
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<b>Waste Disposal Methods</b>																							
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.																							
<b>Section 14: Transport Information</b>																							
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<b>DOT</b>	Not regulated																						
<b>TDG</b>	Not regulated																						
<b>IATA</b>	Not regulated																						
<b>IMDG/IMO</b>	Not regulated																						
<b>Section 15: Regulatory Information</b>																							
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<b>United States of America Inventory</b>																							
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<p><i>Legend:</i></p> <p>TSCA                    US EPA (TSCA) – Toxic Substances Control Act; 40 CFR Part 710</p> <p>X                        Listed</p> <p>“---”                    Not listed</p>																							
<b>TSCA 12(b) – Notices of Export</b>	Not applicable																						
<b>International Inventories</b>																							
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL)																							
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KECL – NIER number or KE number ( <a href="http://ncis.nier.go.kr/en/main.do">http://ncis.nier.go.kr/en/main.do</a> )																							
<b>U.S. Federal Regulations</b>																							
<b>SARA 313</b>	Not applicable																						
<b>SARA 311/312 Hazard Categories</b>	See Section 2 for more information																						

<b>CWA (Clean Water Act)</b>	Not applicable				
<b>Clean Air Act</b>	Not applicable				
<b>OSHA – Occupational Safety And Health Administration</b>	Not applicable				
<b>CERCLA</b>	Not applicable				
<b>California Proposition 65</b>	This product does not contain any Proposition 65 chemicals.				
<b>U.S. State Right-To-Know Regulations</b>	Not applicable				
<b>U. S. Department of Transportation</b>					
Reportable Quantity (RQ)	N				
DOT Marine Pollutant	N				
DOT Severe Marine Pollutant	N				
<b>U.S. Department of Homeland Security</b>	This product does not contain any DSH chemicals.				
<b><u>Other International Regulations</u></b>					
<b>Mexico – Grade</b>	No information available				
<b>Authorization/Restriction According to EU REACH</b>					
<b>Safety, health, and environmental regulations/legislation specific for the substance or mixture</b>					
<b>Component</b>	<b>CAS No.</b>	<b>OECD HPV</b>	<b>Persistent Organic Pollutant</b>	<b>Ozone Depletion Potential</b>	<b>Restriction of Hazardous Substances (RoHS)</b>
2-Butenedioic Acid (E)-, dimethyl ester	624-49-7	Not applicable	Not applicable	Not applicable	Not applicable
<b>Component</b>	<b>CAS No.</b>	<b>Seveso III Directive (2012/18/EC) – Qualifying Quantities for Major Accident Notification</b>	<b>Seveso III Directive (2012/18/EC) – Qualifying Quantities for Safety Report Requirements</b>	<b>Rotterdam Convention (PIC)</b>	<b>Basel Convention (Hazardous Waste)</b>
2-Butenedioic Acid (E)-, dimethyl ester	624-49-7	Not Applicable	Not applicable	Not applicable	Not applicable



**Section 16: Other Information****Section 16, Other Information**

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. Nothing herein shall be deemed to create any warranty, express or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose.

**SOLA** shall not be held liable for any damage resulting from handling or from contact with the above product. SOLA reserves the right to revise this Safety Data Sheet.