



ALDON CORPORATION

MATERIAL SAFETY DATA SHEET

1533 W. Henrietta Rd.
Avon, New York 14414
(716) 226-6177

MSDS No. FF 355
Effective Date March 2, 1999

SECTION V

HEALTH HAZARD DATA

FF 355

Threshold Limited Value

None established (ACGIH 1992-93). RTECS No. LS9625000
Toxicity data: orl-rat LD50: 10700 mg/kg.

Effects of Overexposure

Slight irritant. May cause symptoms of respiratory irritation. May cause eye irritation. May cause mild skin irritation. Ingestion can cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Exercise appropriate procedures to minimize potential hazards.

Emergency and First Aid Procedures

INGESTION: If swallowed, if conscious, give one or two glasses of water to drink, induce vomiting and call a physician. Never give anything by mouth to an unconscious person. **SKIN:** Flush with water, then wash with mild soap and water. **EYES:** Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. If irritation develops or persists, get medical attention. **INHALATION:** Remove to fresh air. If discomfort or illness develops, get medical attention.

SECTION VI

REACTIVITY DATA

Stability	Unstable		Conditions to Avoid	Excessive temperature and heat, sparks or open flames.
	Stable	X		

Incompatibility (Materials to Avoid)	Strong oxidizers. Alkalies. Avoid contact with active metals.
--------------------------------------	---

Hazardous Decomposition Products	Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide, irritating fumes of maleic anhydride.
----------------------------------	---

Hazardous Polymerization		Conditions to Avoid
May Occur	Will Not Occur	Not applicable.
	X	

SECTION VII

SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled	Recover for use if not contaminated. Wear protective safety equipment and use adequate ventilation. Avoid making dust. Sweep up and place in a suitable container for disposal. Flush spill area with water. Do not allow wash water to pollute water ways and streams.
---	---

Waste Disposal Method	Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.
-----------------------	--

Dispose of in an approved incinerator or if uncontaminated, material may be disposed of in a sanitary landfill.

SECTION VIII

SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type)	None needed in normal laboratory handling. If dusty conditions prevail, work in ventilation hood or wear a NIOSH/MSHA approved dust mask or respirator.
---------------------------------------	---

Ventilation	Local Exhaust	Recommended.	Special	No.
	Mechanical (General)	Recommended.	Other	No.

Protective Gloves	Rubber.	Eye Protection	Chemical safety glasses.
-------------------	---------	----------------	--------------------------

Other Protective Equipment	Eye wash station, lab coat, proper gloves, ventilation hood.
----------------------------	--

SECTION IX

SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing	Store in a cool, dry place away from strong oxidizing materials. Wash thoroughly after handling. Do not disperse in air.
Keep container tightly closed when not in use.	

Other Precautions	Read label on container before using. Do not wear contact lenses when working with chemicals.
-------------------	---

Avoid breathing dust. Avoid prolonged or repeated contact with skin. Remove and wash contaminated clothing.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Revision	No. 5	Date	3/2/99	Approved	Michael Raszeja	Chemical Safety Coordinator	MR
----------	-------	------	--------	----------	-----------------	-----------------------------	----

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	FUMARIC ACID
Chemical Synonyms	Trans-butenedioic Acid
Formula	HO ₂ CCH:CHCO ₂ H
Unit Size	up to 2.5 Kg.
C.A.S. No.	110-17-8

CHEMTREC
800-424-9300
Day 716-226-6177

NFPA
HAZARD RATING

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

HMIS *

Health	1
Fire	1
Reactivity	1

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Fumaric Acid	100%	None established.

CAUTION! MAY CAUSE IRRITATION TO

SKIN, EYES AND MUCOUS MEMBRANES.

SECTION III PHYSICAL DATA

Melting Point (°F)	286°C (546°F)	Specific Gravity (H ₂ O = 1)	1.635 (20/4°C)
Boiling Point (°F)	Decomposes above 150°C (302°F)	Percent Volatile by Volume (%)	Non-volatile (NA).
Vapor Pressure (mm Hg)	Negligible as solid.	Evaporation Rate ()	Non-volatile (NA).
Vapor Density (Air=1)	Not applicable.		
Solubility in Water	9.8 g/100 mL. water @ 100°C; 0.5 g/100 mL. @ 20°C.		
Appearance & Odor	White to off-white crystalline powder; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	282°C (539°F) COC	Flammable Limits in Air % by Volume	Lower 0.130 Upper Unknown
Extinguisher Media	Carbon dioxide (CO ₂); dry chemical (ABC); water spray; regular foam.		

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Fire or excessive heat may produce hazardous decomposition products; can react vigorously with oxidizing materials.

D.O.T. NON-REGULATED.

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20