

MATERIAL SAFETY DATA SHEET

Maleic anhydride

Section 1 - Chemical Product and Company Identification

MSDS Name:	Maleic anhydride
Synonyms:	MA ; 2,5-Furandione
Company Identification: (INDIA)	Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA
For information in the INDIA, call:	Tel: +91 - 22 - 2275 5555 / 6184 0000, Fax: +91 - 22 - 2275 5556 / 6184 0001

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
108-31-6	Maleic anhydride	99%	203-571-6

Hazard Symbols:	C
	
Risk Phrases:	22 34 42/43

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful if swallowed. Causes burns. May cause sensitization by inhalation and skin contact. Moisture sensitive.

Potential Health Effects

Eye:	Causes eye burns. May cause conjunctivitis. Causes redness and pain.
Skin:	Causes skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Causes redness and pain. May cause blistering of the skin.
Ingestion:	Harmful if swallowed. Causes gastrointestinal tract burns.
Inhalation:	May cause allergic respiratory reaction. May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Causes chemical burns to the respiratory tract.
Chronic:	Repeated exposure may cause allergic respiratory reaction (asthma). Prolonged or repeated contact may cause possible eczema.

Section 4 - First Aid Measures

Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin:	Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion:	Get medical aid immediately. Wash mouth out with water.
Inhalation:	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to	Treat symptomatically and supportively.

Physician:

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air.
Extinguishing Media:	Use carbon dioxide. Use alcohol foam. Do NOT use dry powder.

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Vacuum or sweep up material and place into a suitable disposal container.

Section 7 - Handling and Storage

Handling:	Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes. Take precautionary measures against static discharges.
Storage:	Store in a cool, dry place. Store in a tightly closed container. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits	
	CAS# 108-31-6:
	United Kingdom, WEL - TWA: 1 mg/m ³ TWA United Kingdom, WEL - STEL: 3 mg/m ³ STEL
	United States OSHA: 0.25 ppm TWA; 1 mg/m ³ TWA
	Belgium - TWA: 0.25 ppm VLE; 1 mg/m ³ VLE
	France - VLE: 1 mg/m ³ VLE
	Germany: 0.1 ppm TWA; 0.41 mg/m ³ TWA
	Japan: 0.1 ppm OEL; 0.4 mg/m ³ OEL Japan: 0.2 ppm Ceiling; 0.8 mg/m ³ Ceiling
	Malaysia: 0.25 ppm TWA; 10 mg/m ³ TWA
	Netherlands: 0.1 ppm MAC; 0.4 mg/m ³ MAC
	Spain: 0.25 ppm VLA-ED; 1 mg/m ³ VLA-ED
Personal Protective Equipment	
Eyes:	Wear chemical splash goggles.
Skin:	Wear appropriate protective gloves to prevent skin exposure.
Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Respirators:	Follow the OSHA respirator 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 if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Flakes
Color:	white
Odor:	pungent odor
pH:	Not available
Vapor Pressure:	0.16 mm Hg @ 20 deg C
Viscosity:	1.6 mPa.s @60 deg C
Boiling Point:	200 deg C @ 760 mmHg (392.00°F)
Freezing/Melting Point:	52-55 deg C
Autoignition Temperature:	477 deg C (890.60 deg F)
Flash Point:	103 deg C (217.40 deg F)
Explosion Limits: Lower:	1.40 vol %
Explosion Limits: Upper:	7.10 vol %
Decomposition Temperature:	
Solubility in water:	79g/100ml in water (25°C)
Specific Gravity/Density:	
Molecular Formula:	C4H2O3
Molecular Weight:	98.06

Section 10 - Stability and Reactivity

Chemical Stability:	Stable.
Conditions to Avoid:	Incompatible materials, ignition sources, dust generation, exposure to moist air or water.
Incompatibilities with Other Materials	Strong oxidizing agents, strong reducing agents, strong acids, strong bases, alkali metals, alkaline earth metals, amines, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), triethylamine, pyridine, ammonium ions.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

RTECS#:	CAS# 108-31-6: ON3675000
LD50/LC50:	RTECS: CAS# 108-31-6: Dermal, guinea pig: LD50 = >20 gm/kg; Draize test, rabbit, eye: 1% Severe; Oral, mouse: LD50 = 465 mg/kg; Oral, rabbit: LD50 = 875 mg/kg; Oral, rat: LD50 = 400 mg/kg; Skin, rabbit: LD50 = 2620 mg/kg;
Carcinogenicity:	Maleic anhydride - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other:	See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:	Fish: Mosquito Fish: LC50 = 240 mg/l; 96 H; Fish: Bluegill/Sunfish: LC50 = 150 mg/l; 24 H; Bacteria: Phytobacterium phosphoreum: EC50 = 44 ppm; 30 min.; Microtox test Daphnia: LC50 = 330 mg/l; 48 H; Fish: Rainbow trout: LC50 = 75 mg/l; 96 H;
Other:	Do not empty into drains.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	MALEIC ANHYDRIDE	MALEIC ANHYDRIDE	MALEIC ANHYDRIDE
Hazard Class:	8	8	8
UN Number:	2215	2215	2215
Packing Group:	III	III	III

USA RQ: CAS# 108-31-6: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: C
Risk Phrases:
➤ R 22 Harmful if swallowed.
➤ R 34 Causes burns.
➤ R 42/43 May cause sensitization by inhalation and skin contact.
Safety Phrases:
➤ S 22 Do not breathe dust.
➤ S 26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
➤ S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
➤ S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
WGK (Water Danger/Protection)
➤ CAS# 108-31-6: 1
Canada
➤ CAS# 108-31-6 is listed on Canada's DSL List
US Federal
➤ TSCA
➤ CAS# 108-31-6 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:	July 22, 2015
Revision #0 Date	

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