



Maleic Anhydride (MA)

Material Safety Data Sheet (MSDS)

PRODUCT NAME

Case#108-31-6

MALEIC ANHYDRIDE (MA)

APPEARANCE

Molten colorless liquid or white solid. Penetrating odor. Completely soluble in water.

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PHYSICAL PROPERTIES

Chemical Name	:	2 – 5 Furandione
Molecular Formula	:	C ₄ H ₂ O ₃
Molecular Weight	:	98.06
Melting Point	:	52.4 °C
Boiling Point	:	202 °C
Thermal Decomposition Temp	:	> = 200 °C

HAZARD IDENTIFICATION**Health Hazards**

Liquid or solid will burn skin and eyes. Skin contact causes irritation & redness. Harmful if swallowed. Inhalation causes coughing, sneezing, throat irritation and may cause bronchial spasms in asthma. Vapors causes severe eye irritation, photophobia and double vision may occur.

Fire Hazards

Flash Point (Liquid)	:	101.7 °C	(close cup)
Ignition Temperature	:	475.0 °C	
Explosion Limits	:	1.4 %	(Volume) Lower
		7.1 %	(Volume) Upper

Hazardous Reactions

It reacts with water, producing heat. When heated above 148.9 °C in the presence of various materials (strong acids and bases, alkali metals, oxidizing agents or amines) may generate heat and Carbon Di Oxide. Will explode if confined.

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REVIEWED

APPROVED

INTERPRETED

Manager HSE

Dy. Director
Technical

Manager HSE

Director

Stakeholder

PACKING

It is available in polypropylene bags of 25 Kg. net with inner liner of polyethylene.

FIRST AID

Skin

Remove contaminated clothing and shoes. Flush effected area with plenty of water & soap. Contaminated clothing should be washed or dry-cleaned before-use.

Eyes

Flood the eyes with plenty of water for 15 minutes, holding the eyes open. Do not rub eyes. Get immediate medical attention.

Ingestion

Wash out mouth with water. Give sips of cold water or milk to soothe the affected parts. Do not induce vomiting. Treatment may be needed for shock. Do not give anything for eating or drinking to an unconscious person. If there is difficulty in breathing, give oxygen. If breathing stops or shows signs of failing, apply artificial respiration. Do not use mouth to mouth ventilation. If heartbeat absent, give external cardiac compression. Get immediate medical attention.

Inhalation

Remove from exposure. Keep warm and at rest

Burns

For molten maleic anhydride burns, get immediate medical attention. Doctors to remove crust and treat as chemical and thermal burn. In case of burns, cooling down the burnt skin has always been a relieving effect.

ACCIDENTAL RELEASE MEASURES

Personal Protective Clothing

Wear appropriate clothing and respiratory protection.

Environmental Precaution

Try to prevent the material from entering drains or water reservoirs.

Spillage

Allow to solidify. Large spillages should be collected for disposal. Sweep up into suitable containers for necessary disposal. Solids spills can easily be recovered before any significant reaction with water occurs. Avoid creating dust. Collected material then should be neutralized with Caustic Soda or Sodium Bi Carbonate. Finally flush area with plenty of water.

Disposal

Incineration. Land fill after ensuring that material is no longer reactive and has been neutralized. Dispose of in accordance all applicable local and national regulations.

Ecological Effects

Readily Biodegradable

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This product is rated as practically non-toxic to aquatic species. Test on the fish show a 96 h Tlm of 1000 mg / liter.

HANDLING AND STORAGE

Avoid dust formation, contact with skin, eyes and clothing. Keep away from foodstuff. Wash hands at every break of work.

Storage

Store in a dry, cool & well ventilated place. Care must be taken to avoid wetting of sacks and subsequent drying in storage. Liquid should not be stored higher than 65 °C. Keep away from light, moisture and source of ignition.

Stability : 06 Months
Materials to avoid : Water, Oxidizing agents, Strong Mineral Acids & Bases.

Earthing

Maleic Anhydride has low ignition energy so adequate earthing has to be maintained at all stages of handling and processing.

EXPOSURE CONTROL / PERSONAL PROTECTION

Threshold Limit Value

TWA (8 hours) : 0.25 ppm or 1 mg / m³
 TWA (15 minutes) : 0.75 ppm or 3 mg / m³

Respiratory Protection

Suitable respiratory equipment to be used (e.g., Half Face Mask, Full Face Mask and Fresh air respiratory system depending upon humidity and concentration of vapors.) On exposure to liquid use full face gas mask with filter cartridge of type ‘A’ (Brown). Use dust filter for bag handling.

Eye Protection

Safety / Splash goggles.

Hand Protection

Gloves (PVC, plastic material, rubber).

General Personal Protection

Do not breathe dust.

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TRANSPORTATION

Maleic Anhydride (CAS No. 108-31-6) is classified for the purpose of transportation.

UN Number : **2215**
Proper Shipping Name : **Maleic Anhydride**

Road Transport ADR / RID

Class : 8
 Item No. : 31 C
 Hazard Identification Number : 80
 Packing Group : III

Maritime Transport IMDG

Class : 8
 Packing Group : III
 Ems Number : 8-05 (for solids)
 IMDG-Proper shipping name : Maleic Anhydride
 (a) Solid
 (b) Molten

Air Transport IATA

Class : 8
 Packing Group : III

FIRE FIGHTING MEASURES
Suitable Fire Extinguishing Agents

Foam and Water Spray. Use alcohol resistant foam.

Unsuitable Fire Extinguishing Agents

Water Jet and Dry Chemical Powder because presence of alkali can cause a rapid release of gas with the explosive potential.

Protective Equipment for Fire Fighting

Self contained breathing apparatus. Full protective clothing.

TOXICOLOGICAL INFORMATION

Harmful by ingestion

LD 50 Oral – Rat : 400 mg / Kg.
 LD 50 Skin – Rabbit : 398 mg / Kg.

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REGULATORY ANED LABELING INFORMATION

Maleic Anhydride (EEC No. 607 – 096 – 00 – 9)) is classified and labeled according to following information: -

Hazard Label	:	Xn Irritating
Risk Phrases	:	(R22) Harmful if swallowed. (R36) Irritating to eyes. (R37) Irritating to respiratory system. (R38) Irritating to skin (R42) May cause sensitization by inhalation.
Safety Phrases	:	(S02) Keep out of reach of children. (S22) Do not breathe dust. (S24) Avoid contact with skin. (S25) Avoid contact with eyes. (S28) after contact with skin, wash immediately with plenty of water and soap. (S39) Wear eye / face protection.

OTHER INFORMATION

This information is based on our present state of knowledge, being given in good faith and is intended to describe the product for the purpose of Health, Safety and Environment only. No warranty either expressed or implied is given which regard to the outcome of the use of such information.

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