

# SAFETY DATA SHEET


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## MALEIC ANHYDRIDE

### SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

<b>1.1 Product identifier:</b>	
<b>CAS Number:</b>	108-31-6.
<b>EC number:</b>	203-571-6.
<b>1.2 SYNONYMS</b>	2, 5-Furandione.

### SECTION 2: Hazards identification:

<b>2.1 Classification of the substance or mixture:</b>	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
<b>2.2 Label elements:</b>	Labelling according to Regulation (EC) No 1272/2008 <ul style="list-style-type: none"><li>• Acute toxicity, oral (Category 4)</li><li>• Skin corrosion/irritation (Category 1C)</li><li>• Serious eye damage/eye irritation (Category 1)</li><li>• Sensitisation, respiratory (Category 1)</li><li>• Sensitisation, skin (Category 1)</li></ul>
<b>Hazard Pictograms:</b>	
<b>Signal Word:</b>	Danger
<b>Hazard statements:</b>	<b>H312:</b> Harmful in contact with skin. <b>H314:</b> Causes severe skin burns and eye damage. <b>H317:</b> May cause an allergic skin reaction.
	<b>H335:</b> May cause respiratory irritation..

<b>Precautionary Statements:</b>	<p><b>P260:</b> Do not breathe dust/fume/gas/mist/vapours/spray.</p> <p><b>P280:</b> Wear protective gloves/protective clothing/eye protection/face protection.</p> <p><b>P302+P352:</b> IF ON SKIN: Wash with plenty of soap and water.</p> <p><b>P304+P340:</b> IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p><b>P305+P351+P338:</b> IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p> <p><b>P310:</b> Immediately call a POISON CENTER or doctor/physician.</p> <p><b>P321:</b> Specific treatment (see on this label).</p> <p><b>P363:</b> Wash contaminated clothing before reuse.</p> <p><b>P405:</b> Store locked up.</p> <p><b>P501:</b> Dispose of contents/container to an approved waste disposal plant.</p>
<b>2.3 Other hazards:</b>	
<b>Inhalation:</b>	May cause irritation to the respiratory tract, leading to coughing throat irritation.
<b>Ingestion:</b>	can cause severe irritation or burns to the mouth, throat, and digestive tract, and may lead to nausea, vomiting, and abdominal pain.
<b>Skin Contact:</b>	can cause severe burns, irritation, and allergic reactions,
<b>Eye contact:</b>	May cause irritation, redness, pain and burning sensation.
<b>Chronic Exposure:</b>	may lead to respiratory issues, such as asthma or other allergic respiratory conditions, as well as skin sensitization, causing persistent irritation or dermatitis.

<b>Aggravation of pre-existing conditions :</b>	Individuals with asthma, chronic bronchitis, or other pulmonary disorders may experience worsened symptoms, such as increased wheezing, coughing, or shortness of breath when exposed
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### SECTION 3: Composition/information on ingredients

<b>3.1 Chemical characterisation:</b>	Substances
<b>CAS No:</b>	Description: 108-31-6 MALEIC ANHYDRIDE
<b>Identification number(s):</b>	EC number: 203-571-6

### SECTION 4: First aid measures

<b>4.1 Description of first aid measures</b>	
<b>General information:</b>	
<b>After inhalation:</b>	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician
<b>After skin contact:</b>	Wash off with soap and plenty of water. Consult a physician.
<b>After eye contact:</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
<b>After swallowing:</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
<b>4.2 Most important symptoms and effects, both acute and delayed</b>	Acute exposure can cause severe respiratory irritation, skin burns, and eye damage whereas delayed effects may include respiratory sensitization, asthma, and skin dermatitis after prolonged or repeated exposure.

<b>4.3 Indication of any immediate medical attention and special treatment needed:</b>	special treatment focused on relieving respiratory distress, managing burns, and addressing any allergic reactions or sensitization.
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## SECTION 5: Firefighting measures

<b>5.1 Extinguishing media</b>	dry chemical or carbon dioxide, sand
<b>5.2 Special hazards arising from the substance or mixture</b>	Combustible. Slight fire hazard when exposed to heat or flame. Heating may cause expansion or decomposition leading to violent rupture of containers. May emit acrid smoke and corrosive fumes.
<b>5.3 Advice for firefighters</b>	Wear fully protective suit, safety glasses and respiratory device .
<b>5.4 further information</b>	Use water spray to cool unopened containers.

## SECTION 6: Accidental release measures

<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
<b>6.2 Environmental precautions:</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
<b>6.3 Methods and material for containment and cleaning up:</b>	Contain spillage, and then collect with an absorbent material or sand and then place in container for disposal according to local regulations.

## SECTION 7: Handling and storage

<b>7.1 Precautions for safe handling</b>	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks.
<b>Requirements to be met by storerooms and receptacles:</b>	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
<b>7.3 Specific end uses</b>	no data available

## SECTION 8: Exposure controls/personal protection

<b>8.1 Control parameters</b>	
<b>Additional information about design of technical facilities:</b>	A system of local and general exhaust is recommended
<b>8.2 Exposure controls</b>	
<b>Appropriate engineering controls</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
<b>Personal protective equipment:</b>	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.
<b>General protective and hygienic measures:</b>	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.

<b>Protection of hands:</b>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands
	Eye protection: Required
<b>Protection of Body:</b>	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

## SECTION 9: Physical and chemical properties

<b>9.1 Information on basic physical and chemical properties</b>	
<b>General Information</b>	
<b>Appearance: Form:</b>	Solid crystal
<b>Colour:</b>	white
<b>Odour:</b>	strong, pungent, and acrid odor
<b>pH-value:</b>	No data available
<b>Melting point/Melting range:</b>	53°C.
<b>Boiling point/Boiling range:</b>	202°C.
<b>Flammability (solid, gaseous):</b>	No data available
<b>Ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Self-igniting:</b>	No data available
<b>Flash point:</b>	No data available
<b>Danger of explosion:</b>	Not classified
<b>Explosion limits: Lower:</b>	1.4%
<b>Explosion limits: Upper:</b>	7.1%
<b>Vapour pressure:</b>	25Pa (25°C).
<b>Density at 20 °C:</b>	1.48 g/cm <sup>3</sup> (approx.)
<b>Relative density:</b>	1.5
<b>Vapour density:</b>	3.4
<b>Evaporation rate:</b>	No data available
<b>Solubility in / Miscibility with- -water at 20 °C:</b>	Completely soluble

<b>Partition coefficient:(n-octanol/water)</b>	0.69.
<b>Viscosity:</b>	2.5 cP at 90°C (approx)

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	No data available
<b>10.2 Chemical stability</b>	The material is stable in room temperature
<b>10.3 Possibility of hazardous reactions</b>	This material can react with strong alkali and strong oxidizers
<b>10.4 Conditions to avoid</b>	Spark and static electricity..
<b>10.5 Incompatible materials:</b>	Oxidizers, alkalis and flammable materials
<b>10.6 Hazardous decomposition products</b>	Carbon oxides

## SECTION 11: Toxicological information

<b>11.1 Information on toxicological effects</b>	
<b>Acute Toxicity:</b>	Oral (rat) LD50: 400 mg, Dermal (rabbit) LD50: 2620 mg/kg.
<b>Skin corrosion/Irritation:</b>	causes severe skin corrosion and irritation, leading to redness, pain, and possible blistering or ulceration upon contact.
<b>Serious eye damage/irritation:</b>	causes serious eye damage, resulting in severe irritation, pain, redness
<b>Respiratory damage/irritation:</b>	causes respiratory irritation, leading to symptoms such as coughing, wheezing, shortness of breath, and a burning sensation in the throat and airways
<b>Ingestion:</b>	can cause severe gastrointestinal irritation
<b>Germ cell mutagenicity:</b>	No data available
<b>Carcinogenicity:</b>	No data available
<b>Reproductive toxicity:</b>	no data available

<b>Specific target organ toxicity - single exposure:</b>	No data available
<b>Specific target organ toxicity - repeated exposure:</b>	Respiratory system and skin
<b>Aspiration hazard:</b>	No data available
<b>Signs and Symptoms of Exposure:</b>	Refer section 2.3
<b>11.2 Additional toxicological information</b>	
<b>Aquatic Toxicity:</b>	It can still pose risks to aquatic organisms in relatively low concentrations or with prolonged exposure
<b>Biodegradability:</b>	moderately biodegradable

## SECTION 12: Ecological information

<b>12.1 Toxicity</b> <b>Aquatic toxicity:</b>	<b>LC50</b> (fish): 40-100 mg/L (96 hours) <b>LC50</b> (daphnia): 30-100 mg/L (48 hours) <b>LD50</b> (oral - rats): ~600 mg/kg <b>LD50</b> (dermal - rats): >1,000 mg/kg
<b>12.2 Persistence and degradability:</b>	Moderately persistent
<b>12.3 Bioaccumulative potential:</b>	Not classified
<b>12.4 Mobility in soil:</b>	High mobility
<b>12.5 Other adverse effects</b>	No data available

## SECTION 13: Disposal considerations

<b>13.1 Waste treatment methods</b>	
<b>Uncleaned packaging</b> <b>Recommendation:</b>	Thoroughly rinsed and cleaned with appropriate solvents, then disposed of in accordance with local hazardous waste regulations
<b>Recommended cleansing agents:</b>	Soda ash and water

## SECTION 14: Transport information

<b>14.1 UN-Number · ADR, ADN, IMDG, IATA:</b>	2215
<b>14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:</b>	Maleic anhydride



<b>14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :</b>	8
<b>14.4 Packing group · ADR, IMDG, IATA:</b>	3
<b>14.5 Environmental hazards:</b>	No data available
<b>14.6 Special precautions for user</b>	No data available

## SECTION 15: Regulatory information

<b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU</b>	Directive 2012/18/EU, under that this substance is classified as toxic and corrosive substance.
<b>Named dangerous substances</b>	This substance is listed in Part 2 of the annex to the directive under the category of "Dangerous substances" due to its hazardous properties.
<b>15.2 Chemical safety assessment:</b>	Chemical assessment has been carried out under <b>REACH</b> regulation

## SECTION 16: Other information

Note 1: When products contain two or more hazardous substances, Safety Data Sheets should be prepared based on the risk of the mixture.

Note 2: Manufacturer / supplier should ensure the correctness of the information contained in the safety data sheets, and updated in a timely manner.

Note 3: As a result of product features without the existence of certain information or no data available