

SAFETY DATA SHEET

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MALEIC ANHYDRIDE

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

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

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 • Acute toxicity, oral (Category 4) • Skin corrosion/irritation (Category 1C) • Serious eye damage/eye irritation (Category 1) • Sensitisation, respiratory (Category 1) • Sensitisation, skin (Category 1)
Hazard Pictograms:	
Signal Word:	Danger
Hazard statements:	H312: Harmful in contact with skin. H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction.
	H335: May cause respiratory irritation..

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

Aggravation of pre-existing conditions :	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

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

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician
After skin contact:	Wash off with soap and plenty of water. Consult a physician.
After eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
After swallowing:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed	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.

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

5.1 Extinguishing media	dry chemical or carbon dioxide, sand
5.2 Special hazards arising from the substance or mixture	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.
5.3 Advice for firefighters	Wear fully protective suit, safety glasses and respiratory device .
5.4 further information	Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	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.
6.2 Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
6.3 Methods and material for containment and cleaning up:	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

7.1 Precautions for safe handling	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
7.2 Conditions for safe storage, including any incompatibilities	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.
Requirements to be met by storerooms and receptacles:	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.
7.3 Specific end uses	no data available

SECTION 8: Exposure controls/personal protection

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

Protection of hands:	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
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

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

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

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

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

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

SECTION 12: Ecological information

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

SECTION 13: Disposal considerations

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

SECTION 14: Transport information

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

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is classified as toxic and corrosive substance.
Named dangerous substances	This substance is listed in Part 2 of the annex to the directive under the category of "Dangerous substances" due to its hazardous properties.
15.2 Chemical safety assessment:	Chemical assessment has not been carried out

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.