

SAFETY DATA SHEET

Version: v1

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

1.1 Product identifiers

Product name : Maleic anhydride
Product Number : M116389
Brand : aladdin
CAS-No. : 108-31-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances.

1.3 Company

Company : ALADDIN SCIENTIFIC CORPORATION
Address : 14078 Meridian Parkway,
Riverside, CA. 92518
Telephone : +1 (833) 552-7181
Fax : no data available

1.4 Emergency telephone number

CHEMTREC®, Inside the USA : 1-800-424-9300
CHEMTREC®, Outside the USA :

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Dermal (Category 5), H313

Skin corrosion/irritation (Category 1B), H314

Serious eye damage/eye irritation (Category 1), H318

Respiratory sensitization (Category 1), H334

Skin sensitization (Category 1), H317

Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Respiratory system, H372

Short-term (acute) aquatic hazard (Category 3), H402

2.2 GHS Label elements, including precautionary statements

Pictogram



Danger

Signal word

Hazard statement(s)

H302	Harmful if swallowed
H313	May be harmful in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H372	Causes damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands [and ...] thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] Wear respiratory protection.
P321	Specific treatment (see ... on this label).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333+P313	IF SKIN irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal plant.
P264+P265	Wash hands [and ...] thoroughly after handling. Do not touch eyes.
P301+P317	IF SWALLOWED: Get medical help.
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P317	Get emergency medical help.
P302+P361+P354	IF ON SKIN: Take off Immediately all contaminated clothing. Immediately rinse with water for several minutes.
P316	Get emergency medical help immediately.
P319	Get medical help if you feel unwell.
P342+P316	If experiencing respiratory symptoms: Get emergency medical help immediately.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	: MA; 2,5-Furandione; cis-Butenedioic anhydride; Toxilic anhydride
Formula	: C ₄ H ₂ O ₃
Molecular weight	: 98.06
CAS No.	: 108-31-6
EC-NO.	: 203-571-6

Component	Classification	Concentration
Maleic anhydride	no data available	AR, ≥99%(GC)

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

In case of skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

In case of eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

If swallowed

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

Unsuitable extinguishing media

no data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

no data available

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Operators should be specially trained and strictly abide by the operating procedures. Operation and disposal should be carried out in a place with local ventilation or general ventilation facilities. Avoid eye and skin contact and avoid breathing vapor. See Section 8 for personal protective measures. Keep away from fire and heat sources, and smoking is strictly prohibited in the workplace. Use explosion-proof ventilation systems and equipment. If canning is required, the flow rate should be controlled, and there should be a grounding device to prevent the accumulation of static electricity. Avoid contact with incompatible substances such as oxidizing agents (see section 10 for incompatible substances). When handling, it should be lightly loaded and unloaded to prevent damage to packaging and containers. Empty containers may be harmful residues. Wash hands after use and prohibit eating or drinking in the workplace. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emer

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7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, ventilated warehouse. Moisture sensitive , Argon filled storage.

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

Skin protection

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. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	form: powder, crystals, solid color: White
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available

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e) Melting point/freezing point	52-55°C
f) Initial boiling point and boiling range	200°C
g) Flash point	103°C
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	1.48
n) Water solubility	Soluble in most organic solvents such as water, acetone, benzene, chloroform, etc.
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

9.2 Other safety information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Exothermic reaction with: Alkali metals alkali hydroxides Amines strong alkalis pyridine alkaline earth hydroxides Alcohols Water Oxidizing agents sodium carbonate with Heat. Generates dangerous gases or fumes in contact with: ammonium compounds

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 1,090 mg/kg (OECD Test Guideline 401) Inhalation: No data available

LD50 Dermal - Rabbit - female - 2,620 mg/kg Remarks: (ECHA)

Skin corrosion/irritation

Skin - Rabbit Result: Causes burns. - 4 h Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit Result: Corrosive Remarks: (ECHA)

Respiratory or skin sensitisation

Local lymph node assay (LLNA) - Mouse Result: positive (OECD Test Guideline 429) - Rat Result: May cause sensitization by inhalation. Remarks: (ECHA)

Germ cell mutagenicity

Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Chromosome aberration test Species: Rat Cell type: Bone marrow Application Route: Inhalation Method: OECD Test Guideline 475 Result: negative

Carcinogenicity

no data available

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

Corrosive to the respiratory tract.

Specific target organ toxicity - repeated exposure

Inhalation - Causes damage to organs through prolonged or repeated exposure. - Respiratory system

Aspiration hazard

no data available

Additional Information

Repeated dose toxicity - Rat - male - Oral - 90 Days - LOAEL (Lowest observed adverse effect level) - 100 mg/kg Remarks: (ECHA)

Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect level) - 40 mg/kg Remarks: Subchronic toxicity

RTECS: ON3675000

Cough, Shortness of breath, Headache, Nausea, Vomiting To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - 75 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 42.81 mg/l - 48 h (OECD Test Guideline 202)

Remarks: (in analogy to similar products) The value is given in analogy to the following substances: maleic acid

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 74.35 mg/l - 72 h (OECD Test Guideline 201) Remarks: (in analogy to similar products) The value is given in analogy to the following substances: maleic acid

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) NOEC - Daphnia magna (Water flea) - 10 mg/l - 21 d Remarks: (ECHA)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: > 90 % - Readily biodegradable. (OECD Test Guideline 301B)

Remarks: (in analogy to similar products) The value is given in analogy to the following substances: maleic acid

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

SECTION 13:

13.1 Disposal considerations

Product

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur.

Observe all federal, state and local regulations when disposing of the substance.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 2215

Packing group: III

Class: 8

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Proper shipping name: MALEIC
ANHYDRIDE

Reportable Quantity(RQ): no data
available

Poison Inhalation Hazard: no data
available

Environmental Hazards: no

IMDG

UN number: 2215

Packing group: III

EMS-No: no data available

Proper shipping name: MALEIC ANHYDRIDE

IATA

UN number: 2215

Packing group: III

Class: 8

Proper shipping name: MALEIC ANHYDRIDE

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

SECTION 16: Other information

Prepared By

Regulatory Affairs

ALADDIN SCIENTIFIC CORPORATION

Email: QualityAssurance@aladdinsci.com

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Revision Summary

SDS sections updated v1

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