

According to Regulation (EC) No 1907/2006

Maleic acid



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

1.1. Product identifier

Trade name

Maleic acid

CAS number

110-16-7

EC number

203-742-5

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

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email address

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

According to Regulation (EC) No 1907/2006

Maleic acid



SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Serious eye damage, hazard category 1

Skin corrosion, hazard category 1C

Skin sensitisation, hazard category 1

Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation

Specific Target Organ Toxicity — Repeated exposure, hazard category 2

Acute toxicity, oral, hazard category 4

Acute toxicity, dermal, hazard category 4

Hazard statements

H302, H312, H314, H317, H318, H335, H373

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H302 Harmful if swallowed.

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.

H373 May cause damage to organs through prolonged or repeated exposure

Maleic acid

Precautionary statements

P260 Do not breathe dust.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P310 Immediately call a POISON CENTER/doctor.

P312 Call a POISON CENTER/doctor if you feel unwell.

P314 Get medical advice/attention if you feel unwell.

P321 Specific treatment (see on this label).

P330 Rinse mouth.

P363 Wash contaminated clothing before reuse.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of water/.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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.

P405 Store locked up.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container to .

P362 + P364 Take off contaminated clothing and wash it before reuse.

P333 +P313 If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-pharse M factor acute M factor chronic	Note
maleic acid	110-16-7 203-742-5 01-2119488705-25 607-095-00-3	100%	Acute Tox. 4 - oral, Acute Tox. 4 - dermal, Skin Corr. 1C, Skin Sens. 1, STOT SE 3 - resp. tract irrit., STOT RE 2	H302 + H312, H314, H317, H335, H373, H402 - -	Skin Sens. 1; H317: C ≥ 0,1 %;

Molecular weight

116.0722

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

According to Regulation (EC) No 1907/2006

Maleic acid



SECTION 4: First aid measures

4.1. Description of first aid measures

IF exposed or concerned: Get medical advice/attention. First aiders/ medical personnel need to protect themselves. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing stops, provide artificial respiration. For breathing difficulties oxygen may be necessary.

Skin contact

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

IF SWALLOWED: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only if the persons are fully conscious and awake). Administer activated charcoal (20 - 40g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

Information for doctors

No data available.

4.2. Most important symptoms and effects, both acute and delayed

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. Causes burns by all exposure routes.

See section 11 for more detailed information on health effects and symptoms.

Inhalation

Single exposure may cause the following adverse effects: Causes severe burns. Difficulty in breathing. Unconsciousness, possibly death.

Skin contact

Single exposure may cause the following adverse effects: Causes severe burns. Blistering may occur. May be absorbed in the body and cause dizziness, nausea and vomiting. Unconsciousness, death.

Eye contact

Single exposure may cause the following adverse effects: Causes serious eye damage. Unconsciousness, possibly death.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Immediately call a POISON CENTER/doctor.

According to Regulation (EC) No 1907/2006

Maleic acid



SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Corrosive.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Carbon monoxide (CO). Carbon dioxide (CO₂).

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Avoid contact with skin and eyes. For personal protection, see section 8.

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in a closed container.

Store at ambient temperature.

7.3. Specific end use(s)

No specific usage precautions noted.

According to Regulation (EC) No 1907/2006

Maleic acid



SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No data available

8.2. Exposure controls

Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. Recommended gloves: Nitrile.

Glove Thickness: 0.11 mm

Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Solid

Colour

No data available

Odour

No data available

Melting point / freezing point

130-135°C / 266 - 275°F

Boiling point or initial boiling point and boiling range

157.8°C 997 hPa

Flammability

No data available

According to Regulation (EC) No 1907/2006

Maleic acid



Lower and upper explosion limit

No data available

Flash point

No data available

Auto-ignition temperature

No data available

Decomposition temperature

>135°C/275°F

pH

1.3 100g/l 20°C/68°F

Kinematic viscosity

No data available

Solubility

Soluble in water.

Partition coefficient n-octanol/water

log Pow: -1.3 at 20 °C / 68°F

Vapour pressure

No data available

Density and/or relative density

1.59 g/cm³ 25°C/77°F

Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Violent reactions possible with:
oxidising agents Alkalis Reducing Agents.

10.4. Conditions to avoid

No data available

According to Regulation (EC) No 1907/2006

Maleic acid



10.5. Incompatible materials

Strong oxidising agents.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

No data available

12.2. Persistence and degradability

No data available

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. Endocrine disrupting properties

No data available

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local regulations.

SECTION 14: Transport information

14.1. UN number

3261

According to Regulation (EC) No 1907/2006

Maleic acid



14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Maleic acid)

IMDG proper shipping name

CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Maleic acid)

IATA proper shipping name

Corrosive solid, acidic, organic, n.o.s. (Maleic acid)

14.3. Transport hazard class(es)

Label

ADR/RID/ADN



8

IMDG



8

IATA



8

ADR / RID Class

8

ADR / RID Classification code

C4

ADR / RID hazard identification number

80

IMDG Class

8

IATA Class

8

ADN Class

8

According to Regulation (EC) No 1907/2006

Maleic acid



ADN Class Code

C4

14.4. Packing group

ADR / RID / ADN: III

IMDG: III

IATA: III

14.5. Environmental hazards

IMDG EmS

F-A, S-B

14.6. Special precautions for user

Tunnel restriction code: E

Transport category: 3

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC08

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

This SDS is not mandated under REACH Regulation (EC) No 1907/2006 and is provided for information only.

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

According to Regulation (EC) No 1907/2006

Maleic acid



SECTION 16: Other information

Phrase meaning

Eye Dam. 1 - Serious eye damage, hazard category 1

Skin Corr. 1C - Skin corrosion, hazard category 1C

Skin Sens. 1 - Skin sensitisation, hazard category 1

STOT SE 3 - resp. tract irrit. - Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation

STOT RE 2 - Specific Target Organ Toxicity — Repeated exposure, hazard category 2

Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4

Acute Tox. 4 - dermal - Acute toxicity, dermal, hazard category 4

H302 Harmful if swallowed.

H302 + H312 Harmful if swallowed or in contact with skin

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure

H402 Harmful to aquatic life.