

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** MALEIC ACID

**Other means of identification**

**Product No.:** P460

**Recommended use and restriction on use**

**Recommended use:** Not available.

**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor Information**

**Manufacturer**

Company Name: Avantor Performance Materials, Inc.  
Address: 3477 Corporate Parkway, Suite 200  
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:  
Contact Person: Environmental Health & Safety  
e-mail: [info@avantormaterials.com](mailto:info@avantormaterials.com)

**Emergency telephone number:**

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

## 2. Hazard(s) identification

**Hazard Classification**

**Health Hazards**

Acute toxicity (Oral)	Category 4
Acute toxicity (Dermal)	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A
Skin sensitizer	Category 1
Specific Target Organ Toxicity - Single Exposure	Category 3

**Environmental Hazards**

Acute hazards to the aquatic environment	Category 2
Chronic hazards to the aquatic environment	Category 2

**Label Elements**

**Hazard Symbol:**



**Signal Word:** Warning

**Hazard Statement:** Harmful if swallowed.  
Harmful in contact with skin.  
Causes skin irritation.  
Causes serious eye irritation.  
Toxic to aquatic life with long lasting effects.  
May cause an allergic skin reaction.  
May cause respiratory irritation.

**Precautionary Statement**

**Prevention:** Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Contaminated work clothing should not be allowed out of the workplace.

**Response:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. If skin irritation or rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. Collect spillage. Take off contaminated clothing and wash it before reuse.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up.

**Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Other hazards which do not result in GHS classification:** None.

**3. Composition/information on ingredients**

**Substances**

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
MALEIC ACID		110-16-7	60 - 100%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**4. First-aid measures**

**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Rinse mouth thoroughly. Call a POISON CENTER or doctor/physician if you feel unwell.

**Inhalation:** Move to fresh air. Get medical attention if symptoms persist.

**Skin Contact:** Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** Irritating to eyes, respiratory system and skin.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Treat symptomatically. Symptoms may be delayed.

**5. Fire-fighting measures**

**General Fire Hazards:** In case of fire and/or explosion do not breathe fumes.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

**Methods and material for containment and cleaning up:** Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

**Notification Procedures:** Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

**Environmental Precautions:** Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling:</b>	Use personal protective equipment as required. Avoid inhalation of dust. Wash thoroughly after handling. Avoid contact with eyes. Avoid contact with skin. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Wash contaminated clothing before reuse.
<b>Conditions for safe storage, including any incompatibilities:</b>	Store locked up. Store in cool, dry place. Store in a well-ventilated place.

## 8. Exposure controls/personal protection

### Control Parameters

#### Occupational Exposure Limits

None of the components have assigned exposure limits.

<b>Appropriate Engineering Controls</b>	No data available.
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### Individual protection measures, such as personal protective equipment

<b>General information:</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
<b>Eye/face protection:</b>	Use tight fitting goggles if dust is generated.
<b>Skin Protection</b>	
<b>Hand Protection:</b>	Wear protective gloves.
<b>Other:</b>	Wear suitable protective clothing.
<b>Respiratory Protection:</b>	In case of inadequate ventilation use suitable respirator.
<b>Hygiene measures:</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

## 9. Physical and chemical properties

### Appearance

<b>Physical state:</b>	Solid
<b>Form:</b>	Crystals or powder.
<b>Color:</b>	White, Colorless
<b>Odor:</b>	Mild sour/acidic
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	130 - 139 °C
<b>Initial boiling point and boiling range:</b>	135 °C
<b>Flash Point:</b>	Not applicable
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.

**Upper/lower limit on flammability or explosive limits**

<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	0.000005 kPa (25 °C)
<b>Vapor density:</b>	4 AIR=1
<b>Relative density:</b>	1.590 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	788 g/l (25 °C)
<b>Solubility (other):</b>	alcohol: Freely Soluble acetone: Soluble ether: Slightly Soluble benzene: Practically Insoluble chloroform: Practically Insoluble
<b>Partition coefficient (n-octanol/water):</b>	-0.48
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	116.07 g/mol (C4H4O4)

<b>10. Stability and reactivity</b>
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<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of Hazardous Reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid:</b>	Avoid dust formation. Heat, sparks, flames. Contact with incompatible materials.
<b>Incompatible Materials:</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products:</b>	Oxides of Carbon.

<b>11. Toxicological information</b>
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**Information on likely routes of exposure**

<b>Ingestion:</b>	Harmful if swallowed.
<b>Inhalation:</b>	May be harmful if inhaled.
<b>Skin Contact:</b>	Harmful in contact with skin. Causes skin irritation.
<b>Eye contact:</b>	Causes serious eye irritation.

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

<b>Oral</b>	
<b>Product:</b>	LD 50 (Rat): 708 mg/kg LD 50 (Mouse): 2,400 mg/kg

<b>Dermal</b>	
<b>Product:</b>	LD 50 (Rabbit): 1,560 mg/kg
<b>Inhalation</b>	
<b>Product:</b>	LC 50 (Rat, 1 h): 0.72 mg/l
<b>Repeated Dose Toxicity</b>	
<b>Product:</b>	No data available.
<b>Skin Corrosion/Irritation</b>	
<b>Product:</b>	Causes skin irritation.
<b>Serious Eye Damage/Eye Irritation</b>	
<b>Product:</b>	Causes serious eye irritation.
<b>Respiratory or Skin Sensitization</b>	
<b>Product:</b>	May cause an allergic skin reaction.
<b>Carcinogenicity</b>	
<b>Product:</b>	This substance has no evidence of carcinogenic properties.
<b>IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:</b>	
No carcinogenic components identified	
<b>US. National Toxicology Program (NTP) Report on Carcinogens:</b>	
No carcinogenic components identified	
<b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):</b>	
No carcinogenic components identified	
<b>Germ Cell Mutagenicity</b>	
<b>In vitro</b>	
<b>Product:</b>	No mutagenic components identified
<b>In vivo</b>	
<b>Product:</b>	No mutagenic components identified
<b>Reproductive Toxicity</b>	
<b>Product:</b>	No components toxic to reproduction
<b>Specific Target Organ Toxicity - Single Exposure</b>	
<b>Product:</b>	May cause respiratory irritation. May cause drowsiness or dizziness.
<b>Specific Target Organ Toxicity - Repeated Exposure</b>	
<b>Product:</b>	No data available.
<b>Aspiration Hazard</b>	
<b>Product:</b>	Not classified
<b>Other Effects:</b>	None known.

<b>12. Ecological information</b>
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**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Persistence and Degradability**

**Biodegradation**

**Product:** There are no data on the degradability of this product.

**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative Potential**

**Bioconcentration Factor (BCF)**

**Product:** No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** Log Kow: -0.48

**Mobility in Soil:**

No data available.

**Other Adverse Effects:**

Toxic to aquatic life with long lasting effects.

### 13. Disposal considerations

**Disposal instructions:**

Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Contaminated Packaging:**

Since emptied containers retain product residue, follow label warnings even after container is emptied.

### 14. Transport information

**DOT**

Not regulated.

**IMDG**

Not regulated.

**IATA**

Not regulated.

### 15. Regulatory information

**US Federal Regulations**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

MALEIC ACID Reportable quantity: 5000 lbs.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating

**SARA 302 Extremely Hazardous Substance**

None present or none present in regulated quantities.

**SARA 304 Emergency Release Notification**

Chemical Identity	RQ
MALEIC ACID	5000 lbs.

**SARA 311/312 Hazardous Chemical**

Chemical Identity	Threshold Planning Quantity
MALEIC ACID	500 lbs

**SARA 313 (TRI Reporting)**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

MALEIC ACID Reportable quantity: 5000 lbs.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**US State Regulations**

**US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

**US. New Jersey Worker and Community Right-to-Know Act**

MALEIC ACID Listed

**US. Massachusetts RTK - Substance List**

MALEIC ACID Listed

**US. Pennsylvania RTK - Hazardous Substances**

MALEIC ACID Listed

**US. Rhode Island RTK**

No ingredient regulated by RI Right-to-Know Law present.

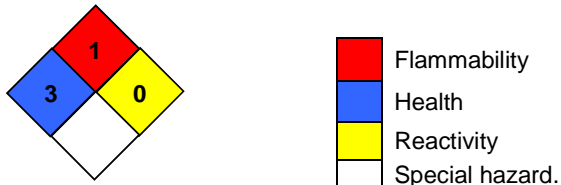


**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

**16. Other information, including date of preparation or last revision**

**NFPA Hazard ID**



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

<b>Issue Date:</b>	12-18-2014
<b>Revision Date:</b>	No data available.
<b>Version #:</b>	1.0
<b>Further Information:</b>	No data available.

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