

Section 1: Identification

Product Name Maleic Acid
Commercial Name Not available
Product Use Not available
Restrictions On Use Not available

Product Code 50-2752

Company PCCA
 9901 South Wilcrest
 Houston, TX 77099
 Phone: 1-800-331-2498
 Fax: 1-800-874-5760

In case of emergency contact:
CHEMTREC (24hr) 1-800-424-9300

Section 2: Hazard(s) Identification

OSHA Haz Com: Hazard Classification Health Hazards Acute toxicity (Oral) Category 4 Acute toxicity (Dermal) Category 4
CFR 1910.1200 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

Signal Word WARNING

Hazard Statement(s) 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.

Pictogram(s) or Symbol(s)



Precautionary Statement(s):

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.

Section 3: Composition/Information on Ingredients

Substance/Mixture Substance
Components Maleic acid
% By Weight 100
CAS# 110-16-7
Molecular Weight 116.07g/mole
Chemical Formula C₄H₄O₄
Synonym(s) (2)-Butenedioic acid (2Z); (Z)-Butenedioic Acid



Safety Data Sheet

For Compliance with OSHA 29 CFR 1910.1200 and ANSI Z400.1-1998

Maleic Acid

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Mixtures Name	CAS#	% by Weight	TLV/PEL	LC50/LD50
Maleic acid	110-16-7	100	Not available.	ORAL (LD50): Acute: 708 mg/kg [Rat]. 2400 mg/kg [Mouse]. DERMAL (LD50): Acute: 1560 mg/kg [Rabbit]. DUST (LC50): Acute: >720 mg/m ³ 1 hours [Rat].

Section 4: First-Aid Measures

Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention. Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing. Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.
Ingestion	Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Symptoms/Effects	
Acute	Irritating to eyes, respiratory system and skin.
Delayed	Irritating to eyes, respiratory system and skin.
Immediate Medical Attention	Treat symptomatically. Symptoms may be delayed.

Section 5: Fire-Fighting Measures**Suitable Extinguishing Media**

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam.

Unsuitable Extinguishing Media

Do not use water jet.

Products of Combustion

These products are carbon oxides (CO, CO₂).

Firefighters Special Equipment and Precautions

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. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Large Spill: Corrosive solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions: Keep locked up.. Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, alkalis. Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 25°C (77°F).

Section 8: Exposure Controls/Personal Protection

Exposure Limits Not available.



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Engineering Controls

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. In case of a Large Spill: Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Section 9: Physical and Chemical Properties

Appearance	Solid. Crystals or powders. White, Colorless		
Odor	Acidulous (Slight.)		
Odor Threshold	Not available.		
Melting Point	130 - 139 °C	pH	Not available.
Freezing Point	Not available.	Vapor Pressure	0.000005 kPa (25 °C)
Boiling Point/Range	Decomposition temperature:	Vapor Density	4 (Air = 1)
Decomposition temperature	Not available.	Viscosity	Not available.
Partition Coefficient: n-octanol/water	Log Kow: -0.48	Evaporation Rate	Not available.
Flash Point	Not available.	Autoignition temperature	Not available.
Flammability	Not available.	Flammability or Explosive Limits:	
		Lower	Not available.
		Upper	Not available.
Solubility(ies)	788g/L@25C		
Other	Relative density: 1.590 (20 °C) Solubility(ies) Solubility in water: 788 g/l (25 °C) Solubility (other): alcohol: Freely Soluble acetone: Soluble ether: Slightly Soluble benzene: Practically Insoluble chloroform: Practically Insoluble		

Section 10: Stability and Reactivity

Reactivity	No dangerous reaction known under conditions of normal use.
Chemical Stability	The product is stable.
Hazardous Polymerization	Non-corrosive in presence of glass.
Conditions to Avoid	High temperatures, flames and sparks, Humidity
Incompatible Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Oxides of Carbon.

Section 11: Toxicological Information
RTECS OM9625000

Acute Toxicity

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 708 mg/kg [Rat]. Acute dermal toxicity (LD50): 1560 mg/kg [Rabbit]. Acute toxicity of the dust (LC50): >720 mg/m3 1 hours [Rat]. Very hazardous in case of ingestion, . Hazardous in case of skin contact (irritant), of inhalation (lung irritant). Slightly hazardous in case of skin contact (permeator). **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. May cause damage to the following organs: kidneys, lungs. Not available. **Acute Potential Health Effects:** Skin: Contact with skin causes irritation with possible burns, especially if the skin is wet or moist. It may cause dermatitis. It may be absorbed through the skin and may be harmful if absorbed through skin. If may affect behavior if absorbed through the skin. Eyes: May cause severe irritation, and possible eye burns. May result is corneal injury. Inhalation: May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath, and delayed lung edema. May cause chemical to the respiratory tract. Inhalation may also affect behavior and cause generalized inactivity, sedation, and other symptoms similar to ingestion. Ingestion: May be harmful if swallowed. May cause severe gastrointestinal tract irritation and burns. May cause severe and permanent damage to the digestive tract. Ingestion may also affect behavior and may cause dizziness, lightheadedness, muscle weakness, tremors, seizures, and coma. May cause kidney damage. **Chronic Potential Health Effects:** Repeated or prolonged overexposure may cause delayed kidney injury. May affect genetic material. May cause respiratory irritation. May cause drowsiness or dizziness.

Skin Corrosion/Irritation

Causes skin irritation.

Serious Eye Damage/Irritation

Causes serious eye irritation.

Respiratory or Skin Sensitization

May cause an allergic skin reaction.

Germ Cell Mutagenicity

No mutagenic components identified

Carcinogenicity

This substance has no evidence of carcinogenic properties.

Reproductive Toxicity

No components toxic to reproduction

Routes of Entry

Absorbed through skin. Inhalation. Ingestion.

Symptoms Related to Exposure

Not available

Potential Health Effects

Not available

Target Organ(s)

Not available

Section 12: Ecological Information**Ecotoxicity**

EC100 Daphnia magna 200mgAf24H. LC50 Labeo rohita 130mgA/24H. LC50 Leuciscus idus 106mgfV24H.

Persistence and Degradability

Expected to be biodegradable in soil and water. Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Bioaccumulative Potential

Not expected to bioaccumulate and/or bioconcentrate.

Mobility in Soil

Not available

Other Adverse Effects

Toxic to aquatic life with long lasting effects

Section 13: Disposal Considerations**Waste Disposal**

Arrange disposal as special waste, by licensed disposal company, in consultation with local Waste Disposal Authority, in accordance with national and regional regulations.

Disposal of Container

Not available

Other Considerations

Not available

Section 14: Transport Information**DOT Classification**

Class 8: Corrosive material : Maleic acid UNNA: NA2215 PG: III

Section 15: Regulatory Information**Regulations**

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are: NONE

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are: NONE;

Pennsylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances on the list must be identified when present in products. Components present in this product at a level which could require reporting under the statute are: Maleic acid

Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are: Maleic acid

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are: Maleic acid

Other

WHMIS CLASS D-2A: Material causing other toxic (Canada) effects (VERY TOXIC). CLASS E: Corrosive solid.;DSCL (EEC) R21/22- Harmful in contact with skin and if swallowed. R38- Irritating to skin. R41- Risk of serious damage to eyes.;Gloves.;Synthetic apron.;Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.;Splash goggles.

Section 16: Other Information

OTHER INFORMATION This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet. We welcome any additional information about our products that customers have obtained by personal experience.