



TCI AMERICA

SAFETY DATA SHEET

Revision number: 1
Revision date: 07/06/2018

1. IDENTIFICATION

Product name: Maleic Acid
Product code: M0006

Product use: For laboratory research purposes.
Restrictions on use: Not for drug or household use.

Company:
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Transportation Emergencies:
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+1-800-424-9300 (U.S.A.)
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Responsible department:
TCI America
Environmental Health Safety and Security
+1- 503-286-7624

2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200: Acute Toxicity - Oral [Category 4]
WHMIS 2015: Acute Toxicity - Dermal [Category 4]
Eye Damage/Irritation [Category 1]
Sensitization - Skin [Category 1]
Specific Target Organ Toxicity (Single Exposure) [Category 3]
Corrosive to Metals [Category 1]
Aquatic Hazard (Acute) [Category 3]
Skin Corrosion/Irritation [Category 1C]

Signal word: Danger!

Hazard Statement(s): May be corrosive to metals
Harmful if swallowed or in contact with skin
Causes severe skin burns and eye damage
May cause an allergic skin reaction
Harmful to aquatic life
May cause respiratory irritation.

Pictogram(s) or Symbol(s):



Precautionary Statement(s):

[Prevention]

Keep only in original container. Do not breathe dusts or mists. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, face protection.

[Response]

If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a poison center or doctor. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor. Absorb spillage to prevent material damage.

[Storage]

Store in corrosive resistant bottle or metal container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

[Disposal]

Dispose of contents and container in accordance with local, regional, national regulations (e.g. US: 40 CFR Part 261, EU:91/156/EEC, JP: Waste Disposal and Cleaning Act, etc.).

Hazards not otherwise classified: None.

[HNOC]

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture:	Substance
Components:	Maleic Acid
Percent:	>99.0%(T)
CAS RN:	110-16-7
Molecular Weight:	116.07
Chemical Formula:	C ₄ H ₄ O ₄
Synonyms:	cis-2-Butenedioic Acid

4. FIRST-AID MEASURES**Description of first aid measures**

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
Skin contact:	Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician.
Eye contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
Ingestion:	Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting.

Symptoms/effects:

Acute:	Pain. Redness.
Delayed:	May have effects on the respiratory tract.

Indication of any immediate medical attention:

Not available.

Notes to physician:

No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Dry chemical, foam, water spray, carbon dioxide.
Hazardous combustion products:	These products include: Carbon oxides
Other specific hazards:	Closed containers may explode from heat of a fire.
Advice for firefighters:	Wear self-contained breathing apparatus if possible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Keep people away from and upwind of spill/leak. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
Environmental precautions:	Prevent product from entering drains.
Methods and materials for containment and cleaning up:	Sweep dust to collect it into an airtight container, taking care not to disperse it. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

7. HANDLING AND STORAGE

Precautions for safe handling:	Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent dispersion of dust. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a local exhaust if dust or aerosol will be generated. Avoid contact with skin, eyes and clothing. Use corrosive resistant equipment.
Conditions for safe storage, including any incompatibilities	
Storage conditions:	Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store locked up. Store away from incompatible materials such as oxidizing agents. Light-sensitive
Packaging material:	Comply with laws. Keep only in original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriate engineering controls: Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust. Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection: Dust respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.

Hand protection: Impervious gloves.

Eye protection: Safety goggles. A face-shield, if the situation requires.

Skin and body protection: Impervious protective clothing. Protective boots, if the situation requires.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C):	Solid		
Form:	Crystalline powder		
Colour:	White		
Odour:	No data available		
Odor threshold:	No data available		
Odour threshold:	No data available		
Melting point/freezing point:	131°C (268°F)	pH:	No data available
Boiling point/range:	No data available	Vapour pressure:	No data available.
Decomposition temperature:	No data available	Vapour density:	4.0
Relative density:	No data available	Dynamic Viscosity:	No data available
Kinematic viscosity:	No data available	Evaporation rate(Butyl Acetate=1):	No data available
Log Pow:	No data available	Autoignition temperature:	No data available
Flash point:	No data available	Flammability or explosive limits:	
Flammability(solid, gas):	No data available	Lower:	2.7%
		Upper:	No data available
Solubility(ies):			
[Water]	Soluble (78g/100mL, 25°C)		
[Other solvents]			
Soluble:	Ether, Alcohols, Acetone, Glacial acetic acid		
Insoluble:	Benzene, Chloroform		

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical stability:	Stable under proper conditions.
Possibility of hazardous reactions:	No special reactivity has been reported.
Incompatible materials:	Oxidizing agents
Hazardous decomposition products:	Carbon dioxide, Carbon monoxide

11. TOXICOLOGICAL INFORMATION

RTECS Number: OM9625000

Acute Toxicity:ihl-rat LC50:>720 mg/m³/1H
skn-rbt LD50:1560 mg/kg

orl-rat LD50:708 mg/kg

Skin corrosion/irritation:

skn-rbt 500 mg/24H MLD

Serious eye damage/irritation:

eye-rbt 100 mg SEV

Respiratory or skin sensitization:

No data available

Germ cell mutagenicity:

dni-hmn-fbr 20 mmol/L

Carcinogenicity:

No data available

IARC: No data available**NTP:** No data available**OSHA:** No data available**Reproductive toxicity:**

No data available

Target organ(s):

May cause respiratory irritation.

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

Fish:	No data available
Crustacea:	No data available
Algae:	No data available

Persistence / degradability:

87 % (by BOD) , 100 % (by TOC) , 100 % (by HPLC)

Bioaccumulative potential(BCF):

No data available

Mobility in soil

Log Pow:	-0.5
Soil adsorption (Koc):	No data available
Henry's Law (PaM³/mol):	1.35 x 10 ⁻⁷

13. DISPOSAL CONSIDERATIONS**Disposal of product:**

Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of container:

Dispose of as unused product. Do not re-use empty containers.

Other considerations:

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

14. TRANSPORT INFORMATION**DOT (US)**

UN number: UN3261	Proper Shipping Name: Corrosive solid, acidic, organic, n.o.s	Class or Division: 8 Corrosive material	Packing Group: III
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IATA

UN number: UN3261	Proper Shipping Name: Corrosive solid, acidic, organic, n.o.s	Class or Division: 8 Corrosive material	Packing Group: III
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IMDG

UN number: UN3261	Proper Shipping Name: Corrosive solid, acidic, organic, n.o.s	Class or Division: 8 Corrosive material	Packing Group: III
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EmS number: F-A, S-B

15. REGULATORY INFORMATION**Toxic Substance Control Act (TSCA 8b.):**

This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations**CERCLA Hazardous substance and Reportable Quantity:**

SARA 313:	Not Listed
SARA 302:	Not Listed

State Regulations**State Right-to-Know**

Massachusetts	Listed
New Jersey	Listed
Pennsylvania	Listed

California Proposition 65:	Not Listed
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Other Information**NFPA Rating:**

Health:	3
Flammability:	1
Instability:	0

HMIS Classification:

Health:	3
Flammability:	1
Physical:	0

International Inventories

Canada: DSL	On DSL
EC-No:	203-742-5

16. OTHER INFORMATION

Revision date: 07/06/2018

Revision number: 1

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.