



Centre Anti-Poison pour le Québec: (800) 463-5060

Tél. (Qc): (418) 660-8666 / 800-890-8666

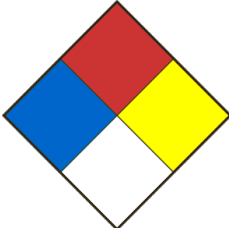
Fax. (Qc): (418) 660-8998

SAFETY DATA SHEET

SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

Product Identifier MALEIC ACID		Product Use Laboratory use	
Chemical formula C ₄ H ₄ O ₄		Product code MR-0109	Molar weight 116,07
Chemical name / Commercial name / Synonymous cis-BUTENEDIOIC ACID, (Z)-BUTENEDIOIC ACID, cis-1,2-ETHYLENEDICARBOXYLIC ACID, MALEINIC ACID, MALENIC ACID, TOXILIC ACID			
Supplier's name Laboratoire MAT		Address-Street 610, Adanac Street	
City Québec		Province Québec	
Postal code G1C 7B7	Internet www.labmat.com	Phone number 418-660-8666 / 800-890-8666	
Emergency phone	CANUTEC: 613-996-6666 CENTRE ANTI-POISON DU QUÉBEC 800-463-5060		
Date SDS 8/30/2019	SDS Prepared by Laboratoire MAT	E-Mail labmat@labmat.com	

SECTION 02 - HAZARDS IDENTIFICATION

Classification WHIMS / GHS	Skin corrosion/irritation - Skin irritation category 2 Serious eye damage/eye irritation - Serious eye damage category 1 Acute toxicity - Oral category 4 Acute toxicity - Dermal category 4 Respiratory or skin sensitization - Skin sensitize category 1 Specific target organ toxicity - Single exposure category 3 Combustible dusts category 1
Signal Word	DANGER
Hazards statements (H)	H302 Harmful if swallowed. H312 Harmful in contact with skin. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. LMH002 May form combustible dust concentrations in air.
Precautionary statements (P)	LMP002 None P261 Avoid breathing dust / fume / gas / mist / vapours / spray. P264 Wash the areas of the body that have been in contact with the product after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/protective clothing/eye protection/face protection. P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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. P310 Immediately call a POISON CENTER or doctor/physician. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P321 Specific treatment (see section 4 of the SDS and on this label). P330 Rinse mouth. P332 + P313 If skin irritation occurs: Get medical advice/attention. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P362 + P364 Take off contaminated clothing and wash it before reuse. P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P501 Dispose of contents/container in accordance with local / regional / national / international regulations or contact a specialist waste disposal company.
PICTOGRAMS	
Other dangers	NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Significant; 4=Extreme)
	Health 2 Fire 1 Reactivity 0 Special danger

SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingrédients (Dénomination chimique / synonymes)	Numéro CAS et tout identificateur unique	Concentration (%)
Acide maléique	110-16-7	<=100

SECTION 04 - FIRST AID MEASURES

Eye contact	Wash eyes with large amounts of water for at least 15 minutes while holding eyelids apart to rinse eyes. If irritation persists, seek medical attention.
Skin contact	Wash skin with plenty of water for at least 15 minutes. Remove soiled clothing. If irritation persists, seek medical attention.
Inhalation	Move the unwell person to the fresh air. If breathing is difficult, give oxygen. Consult a physician.
Ingestion	If the person is conscious, rinse the mouth with water. Never give anything by mouth to an unconscious person. Consult a physician.
Most important symptoms and effects (acute and delayed)	Ref. section 11.
Immediate medical attention and special treatment, if necessary	In case of medical consultation, keep this sheet available.
General advice	Show this safety data sheet to the doctor in attendance.

SECTION 05 - FIREFIGHTING MEASURES

Flammability	No
Ignition conditions	Flammable in the presence of a source of ignition when the temperature is above the flash point. Fine dust in sufficient concentration may be combustible, or explode if confined to a small space and subject to a source of ignition.
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	Data not available.
Hazardous combustion / decomposition products	Hazardous decomposition products formed under fire conditions. Carbon oxides.
Special fire and explosion hazards	May form concentrations combustible dust in the air. May react violently with incompatible products (Ref Section 10).
Special protective equipment and precautions for firefighters	Discard incompatible substances if this can be done without risk. Firefighters should be equipped with standard protective equipment, fireproof clothing, face mask, gloves, protective boots and, where appropriate, self-contained breathing apparatus.

SECTION 06 - ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up / Personnel precautions, protective equipment	Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing dust. Use personal protective equipment. Pick up with a shovel or broom, taking care not to scatter dust. Dispose of residues in a container provided for the disposal of hazardous materials. Do not let product enter drains. Discharge into the environment must be avoided.
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SECTION 07 - HANDLING AND STORAGE

Conditions for safe storage	Keep container tightly closed in a dry and well-ventilated place. Store in cool place.
Methods of handling	Always open containers slowly to allow any excess pressure to vent. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust or vapor is formed.

SECTION 08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace control parameters

Components	CAS-No.	Control	Value	Basis
MALEIC ACID	110-16-7	TLV, TWA, STEL	No data available	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TLV, TWA, STEL	No data available	Canada. British Columbia OEL
		TLV, TWA, STEL	No data available	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

Ventilation	Use fan.
Respiratory	If the permissible levels are exceeded, use a mechanical filter / cartridge against NIOSH vapors or a respirator with air supply.
Gloves	Handle with gloves.
Eyes	Safety goggles with safety shutters.
Shoes	Safety shoes.
Clothing	Labcoat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Engineering control	Have safety showers and eyewash stations in the workplace in case of an emergency and a ventilation system to maintain the level of concentrations in the air below the exposure limit values.

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid.
Appearance	Poudre blanche-
Odour	Odeur acidulée.
Odour threshold	Data not available
pH	1.3 (10% solution aqueuse).
Melting point / Freezing point	137-140°C
Initial boiling point	157.8 °C à 997 hPa.
Boiling range	Data not available
Flash point	127°C
Evaporation rate	Data not available
Flammability	No
Lower flammable / Explosive limit	Data not available
Upper flammable / Explosive limit	Data not available
Vapour pressure	< 0.1 hPa à 20°C-
Vapour density	4.0 (Air=1.0)-
Relative density	1.590 @ 25°Cg/ml
Solubility	Soluble dans l'eau, l'alcool, l'acétone et l'acide acétique glacial. Insoluble dans le benzène.
Partition coefficient water/n-octanol	log Pow : -1.3 à 20°C-
Auto-ignition temperature	Data not available
Decomposition temperature	>135°C
Viscosity	Data not available

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	Non-reactive under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Stable under normal conditions. May form combustible dust concentrations in the air.
Conditions of instability (Including sensitivity to shock / static discharge / vibration)	Exposure to moist air or water.
Incompatible material	Strong oxidizing agents. Bases. Reducing agent.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. Carbon oxides.

SECTION 11 - TOXICOLOGICAL INFORMATION

MALEIC ACID

Routes of exposure	Ingestion, inhalation, skin and eyes.
Acute exposition effects / symptoms:	By exposure route below.
- Eyes	Severe irritation that may cause eye damage.
- Skin	Severe irritation and tissue burns. May cause a skin allergy.
- Inhalation	Irritation of the mucous membranes and the upper respiratory system. Spasms, inflammation and edema of the larynx and bronchi, chemical pneumonia and pulmonary edema.
Acute toxicity (Ingestion)	Oral acute toxicity - Vomiting, irritation of the mucous membranes of the mouth, throat, esophagus and digestive tract.
Chronic exposure effects / symptoms	Burning sensation, gastrointestinal disorders, laryngitis, shortness of breath, cough, headache, nausea and vomiting. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing. The use of a gastric wash or emesis is contraindicated. Possible perforation of the stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to delicate tissues and the danger of perforation.
DL50 (specify species and route of entry)	LD50 Oral - Rat - 708 mg/L LD50 Dermal - Rabbit - 1560 mg/L
CL50 (specify species and route of entry)	LC50 - Inhalation - Data not available.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	LC50 - Oncorhynchus mykiss (rainbow trout) - 75 mg/L - 96 h EC50 - Daphnia magna (Water flea) - 42.81 mg/L - static test EC50 - Pseudokirchneriella subcapitata (green algae) - 74.35 mg/L - static test
Persistence and degradability	Biodegradability aerobic. Method: OECD Test Guideline 301B. Result: 97 % - Readily biodegradable.
Bioaccumulative potential	Bioaccumulation Leuciscus idus melanotus - 3 d. Bioconcentration factor (BCF): < 10.
Mobility in soil	Probable mobility due to its solubility in water.
Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life. All littering must be avoided in the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Method	Dispose of contents / container in accordance with local / regional / national / international regulations / or contact a specialist waste disposal company.
Contaminated Packaging	Dispose of as unused product.

SECTION 14 - TRANSPORT INFORMATION

UN Number	3261
UN Proper shipping name	SOLIDE ORGANIQUE CORROSIF, ACIDE, N.S.A. (acide maléique)
Transport hazard class(es)	8 Corrosive substances
Packing group	III
Limited quantity index	5kg
ERAP Index	-
Special precautions	16

SECTION 15 - REGULATORY INFORMATION

WHIMS CANADA	Skin corrosion/irritation - Skin irritation category 2 Serious eye damage/eye irritation - Serious eye damage category 1 Acute toxicity - Oral category 4 Acute toxicity - Dermal category 4 Respiratory or skin sensitization - Skin sensitize category 1 Specific target organ toxicity - Single exposure category 3 Combustible dusts category 1
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SECTION 16 - OTHER INFORMATION

Further information

The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. It does not represent any guarantee of the properties of the product. Laboratoire MAT Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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