



# SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2017  
Date Updated: August 2, 2017

## SECTION 1. ----- PRODUCT AND COMPANY IDENTIFICATION-----

**Product Name** DL-Malic acid  
**Product Code(s)** MB0333  
**Recommended Use** For Laboratory Research Use Only  
Not for Human or Animal Drug Use

**Supplier** Bio Basic Inc.  
**Address** 20 Konrad Crescent, Markham,  
Ontario, Canada, L3R 8T4  
**Telephone** (905) 474 4493  
**Fax** (905) 474 5794  
**For Chemical Emergency Phone#** (416) 995 9730

## SECTION 2. ----- HAZARDS IDENTIFICATION -----

### Emergency Overview

#### WHMIS Classification

D2B Toxic Material Causing Other Toxic Effects Moderate eye irritant

#### GHS Classification

Acute toxicity, Oral (Category 5)  
Serious eye damage/eye irritation (Category 2A)

#### GHS Label elements, including precautionary statements

Pictogram



Signal word Warning

Hazard statement(s)

H303 May be harmful if swallowed.  
H319 Causes serious eye irritation.

Precautionary statement(s)

P264 Wash skin thoroughly after handling.  
P280 Wear eye protection/ face protection.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.

#### HMIS Classification

**Health hazard:** 2  
**Flammability:** 0  
**Physical hazards:** 0

#### Potential Health Effects

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.

**Ingestion**

May be harmful if swallowed.

**SECTION 3. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -**

<b>Chemical Name</b>	<b>EC No.</b>	<b>CAS-No</b>	<b>Weight %</b>
DL-Malic acid	230-022-8	617-48-1	95-100

**SECTION 4. - - - - - FIRST-AID MEASURES- - - - -**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -**

**Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

**Explosion data - sensitivity to mechanical impact**

No data available

**Explosion data - sensitivity to static discharge**

No data available

**SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES- - - - -**

**Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

**Environmental precautions**

Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**SECTION 7. - - - - - HANDLING AND STORAGE- - - - -**

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

**SECTION 8. - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - -**

**Personal protective equipment**

**Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Specific engineering controls**

Use mechanical exhaust or laboratory fumehood to avoid exposure.

**SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -**

**Appearance**

Form	solid
Colour	No data available

**Safety data**

pH	No data available
Melting point/freezing point	Melting point/range: 131 - 133 °C (268 - 271 °F) - lit.
Boiling point	No data available
Flash point	Not applicable
Ignition temperature	No data available
Auto-ignition temperature	340 °C (644 °F)
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	< 0.1 hPa (< 0.1 mmHg) at 20 °C (68 °F)
Density	1.6 g/cm <sup>3</sup> at 20 °C (68 °F)

Water solubility	646.6 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - soluble
Partition coefficient: n-octanol/water	log Pow: -1.259
Relative vapour density	No data available
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

## SECTION 10. -----STABILITY AND REACTIVITY -----

### **Chemical stability**

Stable under recommended storage conditions.

### **Possibility of hazardous reactions**

No data available

### **Conditions to avoid**

Heat

### **Materials to avoid**

Bases, Oxidizing agents, Reducing agents, Alkali metals

### **Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides  
Other decomposition products - No data available

## SECTION 11. ----- TOXICOLOGICAL INFORMATION -----

### **Acute toxicity**

#### **Oral LD50**

LD50 Oral - Rat - male and female - 3,500 mg/kg

#### **Inhalation LC50**

No data available

#### **Dermal LD50**

No data available

#### **Other information on acute toxicity**

LD50 Intraperitoneal - Rat - 100 mg/kg

LD50 Intraperitoneal - Mouse - 50 mg/kg

### **Skin corrosion/irritation**

No data available

### **Serious eye damage/eye irritation**

Eyes - Rabbit - Severe eye irritation

### **Respiratory or skin sensitisation**

No data available

### **Germ cell mutagenicity**

Genotoxicity in vitro - Ames test - Salmonella typhimurium - negative

### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Reproductive toxicity**

No data available

**Teratogenicity**

No data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

No data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

No data available

**Aspiration hazard**

No data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects**

No data available

**Additional Information**

RTECS: ON7175000

**SECTION 12. ----- ECOLOGICAL INFORMATION -----**

**Toxicity**

Toxicity to daphnia and other aquatic invertebrates	Immobilization LC50 - Daphnia magna (Water flea) - ca. 240 mg/l - 48 h Method: OECD Test Guideline 202
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**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**PBT and vPvB assessment**

No data available

**Other adverse effects**

No data available

**SECTION 13. ----- DISPOSAL CONSIDERATIONS -----**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**  
Dispose of as unused product.

**SECTION 14. ----- TRANSPORT INFORMATION -----**

**DOT (US)**  
Not dangerous goods

**IMDG**  
Not dangerous goods

**IATA**  
Not dangerous goods

**SECTION 15. ----- REGULATORY INFORMATION -----**

**WHMIS Classification**

D2B                      Toxic Material Causing Other Toxic Effects                      Moderate eye irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**SECTION 16. ----- OTHER INFORMATION -----**

**Issuing Date**                                      09-Feb-2009  
**Revision Date**                                      02-Aug-2017  
**Revision Note**                                      No information available.  
**Recommended Restrictions**                      No information available

**Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of SDS**