

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

Product name	DL-MALIC ACID
CAS-No.	6915-15-7
Product code	AR1284

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses	Chemical for analysis and production.
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**1.3 Details of the supplier of the safety data sheet**

Company	RCI LABSCAN LIMITED. 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand
Telephone number	(662) 613-7911-4
Fax number	(662) 613-7915

**1.4 Emergency Telephone Number**

Emergency phone	(662) 613-7911-4
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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Eye irritation (Category 2), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 Label elements**

**Labelling according Regulation (EC) No 1272/2008**

Pictogram



Signal word	Warning
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Hazard statement(s) H319	Causes serious eye irritation.
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Precautionary statement(s) P264 P280 P305 + P351 + P338 P337 + P313	Wash hand thoroughly after handling. Wear eye protection/face protection. 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.
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<b>2.3 Other hazards</b>	None
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**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

Synonyms	(±)-2-Hydroxysuccinic acid, DL-Hydroxybutanedioic acid.
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CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
6915-15-7	230-022-8	-	C <sub>4</sub> H <sub>6</sub> O <sub>5</sub>	134.08 g/mol	>99

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
<b>DL-Malic acid</b>		
CAS-No 6915-15-7 EC-No 230-022-8 EC-Index-No -	>99%	Eye irritation (Category 2), H319

For the full text of the H-Statements mentioned in this Section, see Section 16

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Move to fresh air in case of accidental inhalation of dust.
Skin contact	Remove contaminated clothing and wash affected skin with soap and water.
Eye contact	If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.
Ingestion	Rinse mouth. After swallowing make victim drink water (two glasses at the most), call in physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

Not Available

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Extinguishing with carbon dioxide, dry chemical, foam or water spray.

#### 5.2 Special hazards arising from the substance or mixture

Combustible. Development of hazardous combustion gases or vapors possible in the event of fire. The following may develop in event of fire: carbon oxides. Dust forms explosive mixtures with air.

#### 5.3 Advice for firefighters

Do not stay in dangerous zone without self-contained breathing apparatus. Avoid contact with skin and wear suitable protective clothing.

#### 5.4 Further information

Contain escaping vapors with water. Prevent fire-fighting water from entering surface water or ground water.

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid generation of dusts; do not inhale dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protective equipment see **Section 8**.

## 6.2 Environmental precautions

Do not allow to enter drinking water and sewerage system.

## 6.3 Methods and materials for containment and cleaning up

Carefully sweep up, gather and remove. Avoid generation of dusts. Keep in suitable, closed containers for disposal. Clean up affected area.

## 6.4 Reference to other sections

For disposal see **Section 13**.

# SECTION 7: Handling and storage

## 7.1 Precautions for safe handling

Provision of good ventilation in the working area. Do not leave container open. Avoid spillage. Avoid rising dust.

## 7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry, cool and well-ventilated place. Keep out of direct sunlight and away from heat, water, moisture and incompatible materials. Keep at +5 °C to +30 °C.

## 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

# SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

## 8.2 Exposure controls

### Appropriate engineering controls

The product should only be used in ventilation hoods and fans.

### Individual protection measures (Personal protective equipment, PPE)

#### Eye/face protection

Goggles giving complete protection to eyes.

#### Skin protection

Chemical resistant apron / corrosive protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from nitrile rubber material.
- Splash contact wears gloves from nitrile rubber material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when dusts are generated filter P1 (EN 143) or use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

# SECTION 9: Physical and chemical properties

## 9.1 Information on basic physical and chemical properties

Appearance: Form

Solid

Color	Colorless
Odour	Weak
Odour Threshold	Not Available
pH	~2.3 at 10 g/l at H <sub>2</sub> O at 20 °C
Melting point/range	127-132 °C
Boiling point/range	Not Available
Flash point	203 °C
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	Not Available
upper	Not Available
Vapor Pressure	Not Available
Relative Vapor Density	Not Available
Density	Not Available
Bulk density:	~800 kg/m <sup>3</sup>
Water solubility	558 g/l at 20°C
Partition coefficient (n-octanol/water)	log Pow: -1.26
Auto-Ignition temperature	349 °C
Decomposition Temperature	Not Available
Viscosity	Not Available
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions.

### 10.3 Possibility of hazardous reactions

The substance can react dangerously with strong oxidizing agent.

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

Strong oxidizing agent.

### 10.6 Hazardous decomposition products

Carbon oxides. (Hazardous decomposition products from under fire condition).

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD<sub>50</sub> (oral, rat): >3200 mg/kg.

#### Acute oral toxicity

Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

#### Acute inhalation toxicity

Mucosal irritations

**Skin corrosion/irritation**

Slight irritations.

**Serious eye damage/eye irritation**

Irritations.

**Respiratory or skin sensitization**

Not Available

**Germ cell mutagenicity**

Ames test is negative.

**Carcinogenicity**

Not Available

**Reproductive toxicity**

Not Available

**Teratogenicity**

Not Available

**Specific target organ toxicity (STOT) - single exposure**

Not Available

**Specific target organ toxicity (STOT) - repeated exposure**

Not Available

**Aspiration hazard**

Not Available

**Further information**

The product should be handled with the care usual when dealing with chemicals.

**SECTION 12: Ecological information****12.1 Toxicity**

Toxicity to fish

LC<sub>50</sub> Carassius auratus (goldfish): 295 mg/l /96 h.**12.2 Persistence and degradability**

Biodegradability

&gt; 90%/3d. Readily biodegradable.

**12.3 Bioaccumulative potential**

Partition coefficient (n-octanol/water)

log Pow: -1.26

No bioaccumulation is to be expected (log P o/w &lt;1)

**12.4 Mobility in soil**

Not Available

**12.5 Other adverse effects**

Harmful effect due to pH shift.

Do not allow to enter waters, waste water or soil.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product**

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

**Contaminated packaging**

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

**SECTION 14: Transport information**

Not subject to transport regulations.

**SECTION 15: Regulatory information**

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Not Available

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out.

**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3**

H319 Causes serious eye irritation.

**Recommended restrictions**

Take notice of labels and safety data sheets for the working.

**Reference**

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany, Source: IFA for Databases on hazardous substances (GESTIS).

**Further information**

Contact to RCI Labscan Limited.

**Revision Date**

01/08/2018

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