

## SAFETY DATA SHEET

### 1. Identification

<b>Product Name</b>	<b>DL-Malic acid</b>
<b>Cat No. :</b>	<b>AC125250000; AC125250010; AC125250050; AC125252500; AC125255000</b>
<b>CAS No</b>	6915-15-7
<b>Synonyms</b>	DL-Hydroxysuccinic acid
<b>Recommended Use</b>	Laboratory chemicals.
<b>Uses advised against</b>	Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

#### Company

XI'AN AOGU BIOTECHCO.,LTD  
Room 1703, Block B, Baode Yungu International, 52 Jinye 1st Road,  
Xi 'an Hi-Tech Zone, Shaanxi Province 710075  
Tel 0086-18091843361

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious Eye Damage/Eye Irritation

Category 2

#### Label Elements

#### **Signal Word**

Warning

#### **Hazard Statements**

Causes serious eye irritation



### Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

#### Eyes

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

#### Hazards not otherwise classified (HNOC)

None identified

## 3. Composition/Information on Ingredients

Component	CAS No	Weight %
Malic acid	6915-15-7	<=100

## 4. First-aid measures

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Most important symptoms and effects</b>	None reasonably foreseeable.
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Chemical foam.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	203 °C / 397.4 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	340 °C / 644 °F
<b>Explosion Limits</b>	

Upper No data available  
 Lower No data available  
 Sensitivity to Mechanical Impact No information available  
 Sensitivity to Static Discharge No information available

**Specific Hazards Arising from the Chemical**

Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

<b>Health</b> 2	<b>Flammability</b> 1	<b>Instability</b> 0	<b>Physical hazards</b> N/A
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**6. Accidental release measures**

<b>Personal Precautions</b>	Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.
<b>Environmental Precautions</b>	Should not be released into the environment.
<b>Methods for Containment and Clean Up</b>	Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

**7. Handling and storage**

<b>Handling</b>	Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.
<b>Storage.</b>	Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Bases. Metals. Reducing Agent.

**8. Exposure controls / personal protection**

<b><u>Exposure Guidelines</u></b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
<b><u>Personal Protective Equipment</u></b>	
<b>Eye/face Protection</b>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

Physical State	Solid
Appearance	Off-white
Odor	Odorless
Odor Threshold	No information available
pH	~ 2 1% aq. solution
Melting Point/Range	128 - 132 °C / 262.4 - 269.6 °F
Boiling Point/Range	No information available °C / °F
Flash Point	203 °C / 397.4 °F
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	0.00039 Pa @ 25 °C
Vapor Density	Not applicable
Specific Gravity	1.615 g/cm <sup>3</sup> @20°C
Bulk Density	&1615 kg/m <sup>3</sup> @ 20°C
Solubility	Soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	340 °C / 644 °F
Decomposition Temperature	> 225°C - < 235°C
Viscosity	Not applicable
Molecular Formula	C4 H6 O5
Molecular Weight	134.09

## 10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Excess heat. Incompatible products.
Incompatible Materials	Bases, Metals, Reducing Agent
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Malic acid	3500 mg/kg bw (Rat)	>20000 mg/kg bw (Rabbit)	>1.306 mg/L air (analytical) 4h (Rat)

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Severe eye irritant
Sensitization	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Malic acid	6915-15-7	Not listed	Not listed	Not listed	Not listed	Not listed

<b>Mutagenic Effects</b>	No information available
<b>Reproductive Effects</b>	No information available.
<b>Developmental Effects</b>	No information available.
<b>Teratogenicity</b>	No information available.
<b>STOT - single exposure</b>	None known
<b>STOT - repeated exposure</b>	None known
<b>Aspiration hazard</b>	No information available
<b>Symptoms / effects, both acute and delayed</b>	No information available
<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Malic acid	EC50 > 100 mg/L 72h (OECD 201)	LC50: > 100 mg/L 96h (OECD 203)	EC50 > 300mg/L 3h (OECD 209)	LC50 = 240 mg/L 48h (OECD 202)

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Malic acid	-1.26

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

<b>DOT</b>	Not regulated
<b>TDG</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG/IMO</b>	Not regulated

## 15. Regulatory information

### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Malic acid	6915-15-7	X	ACTIVE	-

#### **Legend:**

**TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)**

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export      Not applicable

**International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Japan (ISHL), Japan (ISHL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Malic acid	6915-15-7	X	-	230-022-8	X	X	X	X	X	KE-20414

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations**

**SARA 313**      Not applicable

**SARA 311/312 Hazard Categories**      See section 2 for more information

**CWA (Clean Water Act)**      Not applicable

**Clean Air Act**      Not applicable

**OSHA - Occupational Safety and Health Administration**      Not applicable

**CERCLA**      Not applicable

**California Proposition 65**      This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**      Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ):      N  
 DOT Marine Pollutant      N  
 DOT Severe Marine Pollutant      N

**U.S. Department of Homeland Security**      This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade**      No information available

**Authorisation/Restrictions according to EU REACH**

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Malic acid	6915-15-7	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Malic acid	6915-15-7	Not applicable	Not applicable	Not applicable	Not applicable

## **16. Other information**

Prepared By

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### **Disclaimer**

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**