

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

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## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Ascorbic acid

### 1.2 Other means of identification

Product number -  
Other names L-Threoascorbic acid, Antiscorbutic factor, Vitamin C; L-Ascorbic acid; L(+)-Ascorbic acid

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.  
Uses advised against no data available

### 1.4 Supplier's details

Company Shanghai Yansheng Internet Technology Co., Ltd  
Address 513, A3 / F, green space future center, Fengxian District, Shanghai, 201400, China  
Telephone +86-4000-6969-66

### 1.5 Emergency phone number

Emergency phone number +86-4000-6969-66  
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

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## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Not classified.

### 2.2 GHS label elements, including precautionary statements

Pictogram(s) No symbol.  
Signal word No signal word  
Hazard statement(s) none  
Precautionary statement(s)  
Prevention none  
Response none  
Storage none  
Disposal none

### 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Ascorbic acid	Ascorbic acid	50-81-7	200-066-2	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth.

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

**SYMPTOMS:** Symptoms of exposure to this compound may include irritation of the skin, eyes and respiratory tract. Ingestion of large amounts may cause gastrointestinal distress and diarrhea. Exposure may also cause the formation of renal calcium oxalate calculi. There have been cases of allergic reaction with eczema, urticaria and asthma. The mucolytic effect of this compound might render the cervical mucus less permeable to spermatozoa. **ACUTE/CHRONIC HAZARDS:** This compound may cause irritation of the skin, eyes and respiratory tract. When heated to decomposition it emits acrid smoke and irritating fumes. (NTP, 1992)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

All sources of vitamin C should be withdrawn and treatment for gastrointestinal symptoms provided, including antiemetics. If significant hemolysis occurs, intravenous hydration to maintain urine output should be administered. Monitoring renal function should be performed, and rarely, transfusion of packed red blood cells is required.

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. A water spray may also be used. (NTP, 1992)

### 5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

### 5.3 Special protective actions for fire-fighters

Use water spray, powder.

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## SECTION 6: Accidental release measures

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

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

### 6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants and strong bases. Solutions of ascorbic acid are rapidly oxidized in air and in alkaline media; the drug should be protected from air and light.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear safety spectacles.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use local exhaust or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	PHYSICAL DESCRIPTION: White to very pale yellow crystalline powder with a pleasant sharp acidic taste. Almost odorless. (NTP, 1992)
<b>Colour</b>	Crystals (usually plates, sometimes needles, monoclinic system)
<b>Odour</b>	Odorless
<b>Melting point/freezing point</b>	192°C(lit.)

<b>Boiling point or initial boiling point and boiling range</b>	83°C/44mmHg(lit.)
<b>Flammability</b>	Combustible.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	15°C(lit.)
<b>Auto-ignition temperature</b>	1220° F (NTP, 1992)
<b>Decomposition temperature</b>	190-192°C
<b>pH</b>	Between 2,4 and 2,8 (2 % aqueous solution)
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	greater than or equal to 100 mg/mL at 73° F (NTP, 1992)
<b>Partition coefficient n-octanol/water</b>	-2.15
<b>Vapour pressure</b>	9.28X10 <sup>-11</sup> mm Hg at 25 deg C (est)
<b>Density and/or relative density</b>	1.7
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The substance is a strong reducing agent. It reacts violently with oxidants. The solution in water is a medium strong acid.

### 10.2 Chemical stability

Stable to air when dry; impure preparation and in many natural products vitamin oxidizes on exposure to air and light. Aqueous solutions are rapidly oxidized by air, accelerated by alkalies, iron, copper

### 10.3 Possibility of hazardous reactions

L-ASCORBIC ACID is a lactone. Reacts as a relatively strong reducing agent and decolorizes many dyes. Forms stable metal salts. Incompatible with oxidizers, dyes, alkalis, iron and copper. Also incompatible with ferric salts and salts of heavy metals, particularly copper, zinc and manganese (NTP, 1992).

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 11,900 mg/kg
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract.

**STOT-repeated exposure**

no data available

**Aspiration hazard**

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

- Toxicity to fish: LC50 Species: /Oncorhynchus mykiss/ (Rainbow trout); Concentration: 1,020 mg/L for 96 hr /Conditions of bioassay not specified in source examined
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### **12.2 Persistence and degradability**

AEROBIC: Using a mixed microbial consortia enriched from untreated sewage samples collected in the vicinity of a primary treatment plant in Delhi, India, L-ascorbic acid exhibited 36.7 mg/L BOD, suggesting moderate susceptibility to biodegradation(1).

### **12.3 Bioaccumulative potential**

An estimated BCF of 3 was calculated in fish for L-ascorbic acid(SRC), using a log Kow of -1.85(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

### **12.4 Mobility in soil**

The Koc of L-ascorbic acid is estimated as 10(SRC), using a log Kow of -1.85(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that L-ascorbic acid is expected to have very high mobility in soil. The pKa of L-ascorbic acid is 4.70(4), indicating that this compound will exist almost entirely in the anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(5).

### **12.5 Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **13.1 Disposal methods**

**Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## **SECTION 14: Transport information**

### **14.1 UN Number**

ADR/RID: Not dangerous goods. (For reference only, please check.)      IMDG: Not dangerous goods. (For reference only, please check.)      IATA: Not dangerous goods. (For reference only, please check.)

### **14.2 UN Proper Shipping Name**

ADR/RID: Not dangerous goods. (For reference only, please check.)      IMDG: Not dangerous goods. (For reference only, please check.)      IATA: Not dangerous goods. (For reference only, please check.)

### **14.3 Transport hazard class(es)**

ADR/RID: Not dangerous goods. (For reference only, please check.)      IMDG: Not dangerous goods. (For reference only, please check.)      IATA: Not dangerous goods. (For reference only, please check.)

### **14.4 Packing group, if applicable**

ADR/RID: Not dangerous goods. (For reference only, please check.)      IMDG: Not dangerous goods. (For reference only, please check.)      IATA: Not dangerous goods. (For reference only, please check.)

### **14.5 Environmental hazards**

ADR/RID: No      IMDG: No      IATA: No

### **14.6 Special precautions for user**

no data available

### **14.7 Transport in bulk according to IMO instruments**

no data available

## **SECTION 15: Regulatory information**

### **15.1 Safety, health and environmental regulations specific for the product in question**

<b>Chemical name</b>	<b>Common names and synonyms</b>	<b>CAS number</b>	<b>EC number</b>
Ascorbic acid	Ascorbic acid	50-81-7	200-066-2
<b>European Inventory of Existing Commercial Chemical Substances (EINECS)</b>			Listed.
<b>EC Inventory</b>			Listed.
<b>United States Toxic Substances Control Act (TSCA) Inventory</b>			Listed.
<b>China Catalog of Hazardous chemicals 2015</b>			Not Listed.
<b>New Zealand Inventory of Chemicals (NZIoC)</b>			Listed.
<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>			Listed.
<b>Vietnam National Chemical Inventory</b>			Listed.
<b>Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)</b>			Listed.

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**SECTION 16: Other information****Information on revision****Creation Date** July 15, 2019**Revision Date** July 15, 2019**Abbreviations and acronyms**

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

**References**

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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