



SHANDONG TIANLI PHARMACEUTICAL CO., LTD.

South of Weigao Road and East of West Second Ring Road (Chenming Industrial Park)

Shouguang City, Weifang City, Shandong Province, P.R.China

Tel: 0086-536-2238606 Mail: info@lianmengintl.com

SAFETY DATA SHEET

ASCORBIC ACID

Section 1: Identification

1.1 Product identifier

Product Name: ASCORBIC ACID

Chemical Name: L (+)- Ascorbic Acid

Synonyms: L-Ascorbic acid; Vitamin C; L-Threo-2,3,4,5,6-pentahydroxy-1-hexenoic acid-4-lactone

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

General use: For use as an additive of foods and animal feed, ingredient/additive for dietary supplements, ingredient for pharmaceutical products.

Use advised against: None known.

1.3 Details of the supplier and of the safety data sheet

Company:

Shandong Tianli Pharmaceutical Co., Ltd

Address: South of Weigao Road and East of West Second Ring Road (Chenming Industrial Park) Shouguang City, Weifang City, Shandong Province, P.R.China

Phone: 0086-0536-2238606

Fax: 0086-0536-2238639

1.4 Emergency Contact: +86-532-55785586 (24 hours)

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

Product definition: white or slight yellowish, and odorless crystalline or crystal powder, with an acidity taste.

Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008

Not a dangerous substance according to OSHA or to European Union Legislation

2.2 Label elements

Not classified as dangerous according to GHS

Signal word: Warning

Hazard statements: May form combustible dust concentrations in air

2.3 other hazards

Risk of dust explosion

Section 3: Composition/Information on Ingredients

3.1 Substance

Synonyms: L-Ascorbic acid;

Vitamin C;



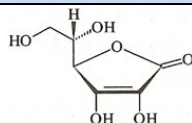
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L-Threo-2,3,4,5,6-pentahydroxy-1-hexenoic acid-4-lactone

Ingredient	% by Weight	CAS No.	Molecular Formula	Structural formula	EINECS No.	Relative Molecular Mass
Ascorbic acid	99-100	50-81-7	C ₆ H ₈ O ₆		200 066 2	176.12

3.2 Mixtures

Not applicable.

Section 4: First-Aid Measures

4.1 Description of first aid measures

General advice: No hazards which require special first aid measures.

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. If symptoms persist, call a physician.

Eyes: Do not rub eyes. Remove contact lenses and immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting the upper and lower lids. Protect unharmed eye.

Skin: Flush skin with water while removing contaminated clothing. Wash affected area with soap and water followed by thorough rinsing. If irritation persists or if rash develops, seek medical attention.

Ingestion: Rinse mouth thoroughly with water if the victim is conscious.

Remove dentures, if present. Do not give milk or alcoholic beverages. Obtain medical attention, especially if a large amount is swallowed.

4.2 Most important symptoms and effects, both acute and delayed

No specific symptoms known.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to doctor and hospital personnel: Treat symptomatically and supportively

Section 5: Fire-Fighting Measures

5.1 Extinguishable media

Suitable methods of extinction: water; Foam.

Unsuitable methods of extinction: None known

Further information: Consider dust explosion hazard.

5.2 Special hazards arising from the substance or mixture

Explosion hazards: May form explosive dust concentrations in the air, especially in confined spaces

5.3 Advice for firefighters

Specific hazards during fire-fighting: None known.

Special protective equipment for firefighters:

Full protective equipment including self-contained breathing apparatus should be used.

Water may be used to cool closed containers to prevent pressure buildup and possible auto ignition or explosion when exposed to extreme heat.



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Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing. Do not inhale dust. Remove all sources of ignition. No smoking. Clean up spills immediately

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. Cover drains and contain spill. Avoid dust generation during cleanup. Collect material and place into an approved container for proper disposal. Dispose should be in accordance with federal, state and local regulations.

6.4 Reference to other sections

See Section 13 for additional waste treatment information

Section 7: Handling and storage

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not breathe dust.

Advice on protection against fire and explosion: Avoid dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities

Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Light sensitive. Keep container tightly closed when not in use. Keep out of reach of children. Storage temperature should be <25°C (<77°F).

7.3 Specific end use

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

Contains no substances with occupational exposure limits.

8.2 Exposure controls

Engineering controls: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: No personal respiratory protective equipment normally required. In case of high dust concentration use a dust mask applicable to local conditions.

Hygiene measures: General industrial hygiene practice.

Eye/face protection: Safety glasses

Hand protection: Glove material: for example nitrile rubber

Skin and body protection: Lightweight protective clothing

Other protective equipment: Wear protective boots if the situation requires.

Environmental exposure controls: Do not empty into drains.



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Personal Protective Equipment (PPE) must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance: white or slight yellowish crystalline or crystal powder;

Odor: odorless

Odor threshold: No information available.

pH: 2.1 - 2.6 (5% as aqueous solution);

Melting point: ca. 190 °C(with decomposition)

Boiling point/range: not determined

Flash point: Not applicable

Evaporation rate: Not applicable

Flammability (solid, gas): Non-flammable. May form combustible dust concentrations in the air

Upper explosive limits(UEL): No data available

Lower explosive limits(LEL): No data available

Vapor pressure: < 0.001 hPa (at 25 °C; calculated (citation from literature))

Vapor density: Not applicable

Relative density: Not applicable

Water solubility: ca. 300 g/l (20 °C)

Solubility in other solvents: Ethanol: ca.20 g/l

Ether: practically insoluble

Glycerol: ca.10 g/l

Partition coefficient: n-octanol/water: log Pow -2.0

Auto-ignition temperature: No data available

Viscosity: No data available

9.2 Other information:

Combustibility index for deposited dust: 2 (23 °C); 2 (100 °C)

Dust explosion class: St(H)1 (Milled sample, Median value of the tested sample 0.017 mm, Loss on drying 0.3 %; The value was determined in the modified Hartmann tube.)

Section 10: Stability and Reactivity

10.1 Reactivity

No special reactivity has been reported.

10.2 Chemical stability

This product is stable under recommended storage conditions.



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10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur and dust may form explosive mixture in air.

10.4 Conditions to avoid

Contact with incompatible materials; exposure to light, heat and humidity; dust generation and accumulation.

10.5 Incompatible materials

Oxidizing agents, bases, metals, metal salts

10.6 Hazardous decomposition products

No decomposition if used as directed.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute oral toxicity: LD₅₀ 11900 mg/kg(oral, rat); LD₅₀ 8000mg/kg(oral, mouse); LD₅₀ 518 mg/kg(iv., mouse).

Acute inhalation toxicity: No data available

Acute dermal toxicity: Acute toxicity estimate : > 5,000 mg/kg (Calculation method)

Skin irritation/corrosion: No skin irritation (Rabbit, OECD Test Guideline 404, 4 h)

Eye irritation/corrosion: No eye irritation (Rabbit, OECD Test Guideline 405);

Dust contact with the eyes can lead to mechanical irritation.

Sensitization: Did not cause sensitization

Genotoxicity in vitro: No indication for human genotoxicity known.

Mutagenicity: No data available.

Specific organ toxicity - single exposure

No data available

Specific organ toxicity - repeated exposure

No data available

Aspiration hazard

No aspiration toxicity classification

Section 12: Ecological Information

12.1 Toxicity

Toxicity to fish: Oncorhynchus mykiss (rainbow trout) LC50 (96 h) 1,020 mg/l (OECD Test Guideline 203)

12.2 Persistence and degradability

Biodegradability: This material is readily biodegradable. 100 % (15 d) and 97 %, (5 d)(OECD Test Guideline 302B).

12.3 Bioaccumulation potential

Bioaccumulation is unlikely.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

The substance does not fulfill the PBT criteria.

The substance does not fulfill the vPvB criteria.

12.6 Other adverse effects

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.



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Section 13: Disposal Considerations

13.1 Waste treatment methods

User must determine if any wastes generated exhibit hazardous characteristics as per 40 CFR Part 261 or other national /local legislation. The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Disposal of surplus and non-recyclable product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements.

Section 14: Transport Information

14.1 UN number

Not regulated as a dangerous good.

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good.

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations Transportation of Dangerous Goods (TDG) and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

Section 15: Regulatory Information

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

OSHA Hazard Communication Standard: This material is not classified as highly hazardous in accordance with OSHA 29 CRF 1910.1200.

OSHA Process Safety Management Standard: This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.

EPA Risk Management Planning Standard: This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

EPA Federal Insecticide, Fungicide and Rodenticide Act: Not listed.

Toxic Substance Control Act (TSCA) Inventory: Not relevant

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2)) and Chemical Code Number: Not listed

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: Not listed.

SARA 313 Information: None of the chemicals in this product are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: None of the chemicals in this product are subject to reporting requirements of these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: None of the chemicals in this product are subject to reporting requirements of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): This product contains no CERCLA reportable substances.

Clean Air Act (CAA)



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This product does not contain any substances that listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112

(b).This product does not contain any Class 1 Ozone depleters.

This product does not contain any Class 2 Ozone depleters.

Clean Water Act (CWA)

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the State of California to cause cancer, birth defects or reproductive harm.

15.2 Chemical safety assessment

Chemical safety assessment was not carried out.

Section 16: Other Information

Hazardous Material Information System (HMIS)

HEALTH	0
FLAMMABILITY	2
PHYSICAL HAZARD	1
Personal Protection	E

E= safety glasses and gloves
and a dust mask

HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious

4 = Severe * = Chronic Health Hazard

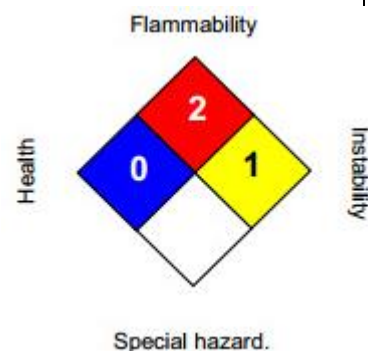
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NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate

3 = High 4 = Extreme

National Fire Protection Association (NFPA)



Abbreviations:

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)
CAS	Chemical Abstract Services
CFR	Code of Federal Regulations
DOT	Department of Transportation
EC ₅₀	Half Maximal Effective Concentration
EMS Guide	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency
ErC ₅₀	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
HCS	Hazard Communication Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IC ₅₀	Half Maximal Inhibitory Concentration
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life and Health
IMDG	International Maritime Dangerous Goods



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IMO	International Maritime Organization
LC₅₀	50% Lethal Concentration
LD₅₀	50% Lethal Dose
LD_{Lo}	Lowest Lethal Dose
mppcf	Millions of Particles Per Cubic Foot
NA	North America
NAERG	North American Emergency Response Guide Book
NIOSH	National Institute for Occupational Safety
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulating and Toxic
PEL	Permissible Exposure Limit
PMCC	Pensky-Martens Closed Cup
ppm	Parts Per Million
RCRA	Resource Conservation and Recovery Act
RID	Dangerous Goods by Rail
RQ	Reportable Quantity
TCC/Tag	Tagliabue Closed Cup
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulating
WHMIS	Workplace Hazardous Materials Information System

Additional information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Shandong Tianli be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Shandong Tianli has been advised of the possibility of such damages.