



## Safety Data Sheet

### Ascorbic Acid

Effective date: May 28 2014

#### Section 1 Product and Company Identification

**Product name:** Ascorbic Acid, Vitamin C

**Company information:**

**Name:** CSPC Weisheng Pharmaceutical (Shijiazhuang) Co., Ltd.

**Add:** No.236 Huanghe Street High-Tech Industrial Development Zone, Shijiazhuang, China.

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#### Section 2 Hazards Identification

**Classification:** Not applicable.

**Label element:** Not applicable.

**Hazard description:** No particular hazards known.

**Potential acute health effects:** Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

#### Section 3 Composition/Information on Ingredients

**Characterization:** Water soluble vitamin; pharmaceuticals, food and feed additive.

**Synonyms:** Vitamin C; L-Ascorbic acid; (5R)-5-[(1S)-1,2-dihydroxyethyl]-3,4-dihydroxyfuran-2(5H)-one

**CAS number:** 50-81-7

**EINECS number:** 200-066-2

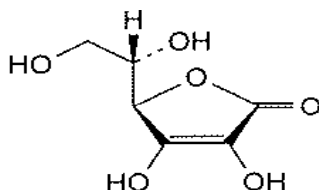


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**Chemical formula:** C<sub>6</sub>H<sub>8</sub>O<sub>6</sub>

**Molecular mass:** 176.13 g/mol

**Structure formula:**



### Section 4 First-aid Measures

**Eye contact:** Rinse immediately with tap water for 10 minutes - open eyelids forcibly.

**Skin contact:** Remove contaminated clothes; wash affected skin with water and soap; do not use any solvents.

**Inhalation:** Remove the casualty to fresh air and keep him/her calm; in the event of symptoms get medical treatment.

**Note to physician:** Treat symptomatically.

### Section 5 Fire-fighting Measures

**Suitable extinguishing media:** Water spray jet, dry powder, foam, carbon dioxide.

**Specific hazards:** Severe dust explosion hazard.

**Protection of fire-fighters:** Precipitate gases/vapors/mists with water spray.

### Section 6 Accidental Release Measures

**Methods for cleaning up:** Collect solids (avoid dust formation) and hand over to waste removal; rinse with plenty of water.

### Section 7 Handling and Storage

#### **Handling**

**Technical measures:** Processing in closed systems, if possible superposed by inert gas (e.g. nitrogen); local exhaust ventilation necessary; take precautionary measures against electrostatic charging; avoid dust formation; high dust explosion hazard.



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**Suitable materials:** Stainless steel, coated steel (protective lacquer), glass, polyethylene, polypropylene, enamel and not easy to corrosion material by acid and alkali.

**Unsuitable materials:** Aluminum, copper, zinc, iron and so on.

### Storage

**Storage conditions:** Store in a non-metallic and sealed container, keep in a dry place and away from light.

**Packaging materials:** Tightly closing; material: coated steel (protective lacquer), glass, polyethylene, polypropylene, PVC and so on.

## Section 8 Exposure Controls/Personal Protection

**Engineering measures:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

### Monitoring

**Threshold value air:** IOEL--10 mg/m<sup>3</sup> (defined as 8-hour time-weighted average)

**Analytcs:** Sampling on glass fibre filter and gravimetric or chemical determination.

### Personal protective

**Respiratory protection:** In case of high dust concentrations: particle mask or respirator with independent air supply.

**Hand protection:** Protective gloves (e.g. made of natural rubber).

**Eye protection:** Safety glasses.

## Section 9 Physical and Chemical Properties

**Color:** White to almost white.

**Form:** Crystalline powder or colorless crystals.

**Odor:** Almost odorless, with sharp acidic, pleasant taste.

**Sieve analysis:** Retained on 40 meshes NMT 20%, between 40-80 meshes NLT 50%.

**Solubility:** Free soluble in water; soluble in ethanol (96 percent); virtually insoluble in ethyl ether; virtually insoluble in chloroform.

**PH value:** 2.1-2.6 (5 % aqueous solution).



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<p><b>Dissociation constant:</b> <math>pK_1 = 4.17</math>; <math>pK_2 = 11.57</math> (water).</p> <p><b>Melting temperature:</b> About 190°C (with decomposition).</p>
<b>Section 10 Stability and Reactivity</b>
<p><b>Stability:</b> Stable at room temperature under exclusion of humidity.</p> <p><b>Conditions to avoid:</b> Humidity; warming.</p> <p><b>Materials to avoid:</b> Oxidizing agents, atmospheric oxygen, bases, metals, metal salts.</p> <p><b>Note:</b> On prolonged storage, a yellow discoloration may occur; through slow decomposition, which does not noticeably diminish biological activity; In aqueous solutions ascorbic acid is very susceptible to oxidative decomposition, particularly in the presence of alkali resp. heavy metal ions.</p>
<b>Section 11 Toxicological Information</b>
<p><b>Acute toxicity:</b> LD50 11'900 mg/kg (oral, rat) LD50 8'000 mg/kg (oral, mouse)</p> <p><b>Local effects:</b></p> <p>Eye: may cause irritations</p> <p>Mucous membranes: may cause irritations</p> <p>Skin: may cause irritations; particularly in conjunction with humidity (perspiration)</p> <p><b>Chronic toxicity:</b> In predisposed individuals 4-12 g/d may cause urinary calculus</p> <p><b>Mutagenicity:</b> No suspicion of human mutagenicity</p> <p><b>Carcinogenicity:</b> Not carcinogenic (several species)</p> <p><b>Reproduction toxicity:</b> Not teratogenic, not embryo toxic</p> <p><b>Note:</b> Oral uptake of up to 9 g per day does not produce any serious toxic effects, however, even lesser quantities may cause diarrhoea; RDA (recommended daily allowance): 60 mg.</p>
<b>Section 12 Ecological Information</b>
<p><b>Inherent biodegradability:</b> Well inherently biodegradable;</p> <p style="text-align: center;">97 %, 5 d; 100 %, 15 d</p>



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<p><b>Ecotoxicity:</b> Barely toxic for fish (rainbow trout) LC50 (96 h) 1020 mg/l; the inhibitory concentration relates to re-attachment to substrate (<i>Dreissena polymorpha</i>) MIC (48 h) &gt; 50 mg/l (nominal concentration).</p> <p><b>Air pollution:</b> Observe local/national regulations.</p>
<p style="text-align: center;"><b>Section 13 Disposal Considerations</b></p>
<p>Waste from residues: Observe local/national regulations regarding waste disposal; drain very small quantities into wastewater treatment plant; large amounts: incinerate in qualified installation.</p>
<p style="text-align: center;"><b>Section 14 Transport Information</b></p>
<p><b>Note:</b> Not classified by transport regulations</p>
<p style="text-align: center;"><b>Section 15 Regulatory Information</b></p>
<p><b>Note:</b> No classification and labeling according to EU directives; this product is on the European Inventory of Existing Commercial Chemical Substances.</p>
<p style="text-align: center;"><b>Section 16 Other Information</b></p>
<p><b>Use:</b> Additive for use in food and pharmaceuticals; feed additive.</p> <p><b>Biological activity:</b> 1 I.U. (international unit) of vitamin C corresponds to the activity of 50 µg of pure ascorbic acid.</p> <p><b>Reference literature:</b> ISO11014-1; General rules for preparation of chemical safety data sheet (CSDS); CLP Regulation (EC).</p> <p>The information in this safety data sheet is based on current scientific knowledge. It should not be taken as expressing or implying any warranty concerning product characteristics.</p>