**Safety Data Sheet**

# Ascorbic Acid

## Section 1-----Product and Company Identification

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| Product name | Ascorbic Acid, Vitamin C（Crystal and fine powder） |
| Company information | Company's Name: CSPC WEISHENG PHARMACEUTICAL (SHIJIAZHUANG) CO., LTD.<br>Company's Phone: +86 311 85388577<br>Company's Fax: +86 311 85388573 |
| MSDS # | P001-01 |

## Section 2----Composition/Information on Ingredient

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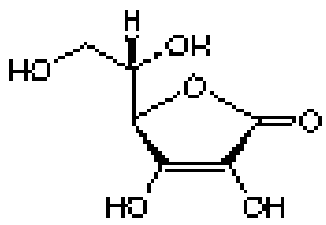
| Characterization | Water soluble vitamin; pharmaceuticals, food and feed additive |
| Chemical name | L (+)-Ascorbic acid |
| Synonyms | Vitamin C<br>L-Ascorbic acid<br>(5R)-5-[(1S)-1,2-dihydroxyethyl]-3,4-dihydroxyfuran-2(5H)-one |
| CAS number | 50-81-7 |
| EINECS number | 200 066 2 |
| Empirical formula | $C_6H_8O_6$ |
| Molecular mass | 176.13 g/mol |
| Structure formula |  |

## Section 3----Hazards identification

Most important hazards -No particular hazards known.

## Section 4----First-aid measures

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| 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<br>- In the event of symptoms get medical treatment |
| Note to physician | - Treat symptomatically |

## Section 5----Fire-fighting measures

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| 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

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| Methods for cleaning up | - Collect solids (avoid dust formation) and hand over to waste removal<br>- Rinse with plenty of water |

## Section 7----Handling and storage

**Handling**

Technical measures - Processing in closed systems, if possible superposed by

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| | inert gas (e.g. nitrogen) |
| | - Local exhaust ventilation necessary |
| | - Take precautionary measures against electrostatic charging |
| | - Avoid dust formation; high dust explosion hazard |
| Suitable materials | - Stainless steel, coated steel (protective lacquer), glass, polyethylene, polypropylene, enamel |
| Unsuitable materials | - Aluminum, copper, zinc, Iron |

**Storage**

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| Storage conditions | - In closed containers |
| | - Protected from humidity |
| | - Below 30 °C |
| Packaging materials | - Tightly closing; material: coated steel (protective lacquer), glass, polyethylene, polypropylene, PVC |

## Section 8----Exposure controls/Personal protection

**Engineering Measures** - See Section 7.

**Monitoring**

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| Threshold value air | 10 mg/m$^3$ (defined as 8-hour time-weighted average) |
| Analytics | - Sampling on glass fibre filter and gravimetric or chemical determination |

**Personal protective equipment**

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| Respiratory protection | - In case of high dust concentrations: particle mask or respirator with independent air supply |
| Hand protection | - Protective gloves (eg. made of Natural Rubber) |
| Eye protection | - Safety glasses |

## Section 9----Physical and chemical properties

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| Color | White to almost white |
| Form | Crystalline powder or colorless crystals |
| Odour | Almost odorless, with sharp acidic, pleasant taste |
| Density | 0.9-1.2 g/ml |
| Sieve analysis | Retained on 40 mesh NMT 20%,between 40-80mesh NLT 50%. |
| Solubility | Free soluble in water<br>Soluble in ethanol (96 percent)<br>Virtually insoluble in ethyl ether<br>Virtually insoluble in chloroform |
| PH value | 2.1-2.6 (5 % aqueous solution) |
| Dissociation constant | $pK_1 = 4.17$<br>$pK_2 = 11.57$ (water) |
| Melting temperature | About 190°C (with decomposition) |

## Section 10---- Stability and reactivity

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| Stability | - Stable at room temperature under exclusion of humidity |
| Conditions to avoid | - Humidity<br>- Warming |
| Materials to avoid | - Oxidizing agents, atmospheric oxygen, bases, metals, metal salts |
| Note | - On prolonged storage, a yellow discoloration may occur Through slow decomposition, which does not noticeably diminish biological activity, however<br>- In aqueous solutions ascorbic acid is very susceptible to oxidative decomposition, particularly in the presence of alkali resp. heavy metal ions |

## Section 11---- Toxicological information

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| Acute toxicity | - LD50 11’900 mg/kg (oral, rat)<br>- LD50 8’000 mg/kg (oral, mouse)<br>- LD50 518 mg/kg (i.v., mouse) |
| Local effects | - Eye: may cause irritations<br>- Mucous membranes: may cause irritations<br>- Skin: may cause irritations; particularly in conjunction with humidity (perspiration) |
| Chronic toxicity | - In predisposed individuals 4-12 g/d may cause urinary calculus |
| Mutagenicity | - No suspicion of human mutagenicity |
| Carcinogenicity | - Not carcinogenic (several species) |
| Reproduction toxicity | - Not teratogenic, not embryotoxic |
| Note | - Oral uptake of up to 9 g per day does not produce any serious toxic effects, however, even lesser quantities may cause diarrhoea<br>- RDA (recommended daily allowance): 60 mg |

## Section 12----Ecological information

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| Inherent biodegradability | - Well inherently biodegradable<br>97 %, 5 d<br>100 %, 15 d |
| Ecotoxicity | Barely toxic for fish (rainbow trout)<br>LC50 (96 h) 1020 mg/l<br>-The inhibitory concentration relates to re-attachment to substrate (Dreissena polymorpha)<br>MIC (48 h) > 50 mg/l (nominal concentration) |

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| Air pollution | - Observe local/national regulations |

## Section 13----Disposal considerations

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| Waste from residues | - Observe local/national regulations regarding waste disposal<br>- Drain very small quantities into wastewater treatment plant<br>- Large amounts: incinerate in qualified installation with flue gas scrubbing |

## Section 14----Transport information

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| Note | - Not classified by transport regulations |

## Section 15----Regulatory information

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| Note | - No classification and labeling according to EU directives |

## Section 16----Other information

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| Use | - Additive for use in food and pharmaceuticals<br>- Feed additive |
| Biological activity | - 1 I.U. (international unit) of vitamin C corresponds to the activity of 50 μg of pure ascorbic acid |
| Reference literature | ISO11014-1<br>General rules for preparation of chemical safety data sheet (CSDS) |

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.