

ASCORBIC ACID



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product name Ascorbic acid fine powder 100mesh (by mill)
Company Hebei Welcome Pharmaceutical Co Ltd
No.11 Zhaiying North Street, Shijiazhuang, China
Phone +86-311-85681188
Fax +86-311-85061173

2. Hazards identification

Most important hazards No particular hazards known

3. Composition/Information on ingredients

Characterization water soluble vitamin; food and feed additive
Chemical name L(+)-Threo-2、3、4、5、6-pentahydroxy-2-hexenoic acid-4-lactone
Synonyms Vitamin C
L-Ascorbic acid
3-Oxo-L-gulofuranolactone (enol form)
CAS number 50-81-7
Empirical formula C₆H₈O₆
Molecular mass 176.13 g/mol

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

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/vapours/mists with water spray

ASCORBIC ACID



6. Accidental release measures

Methods for cleaning up

collect solids (avoid dust formation) and hand over to waste removal

rinse with plenty of water

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

Suitable materials

stainless steel, coated steel (protective lacquer), glass, polyethylene, polypropylene, enamel

Unsuitable materials

aluminium, copper, zinc, iron etc.

Storage

Storage conditions

in closed containers

protected from humidity

at room temperature

Packaging materials

tightly closing material like polyethylene

8. Exposure controls/Personal protection

Engineering Measures

see 7

Monitoring

Threshold value air

none established

Analytics

sampling in water and gravimetric or chemical determination

Personal protective equipment

Respiratory protection

in case of high dust concentrations: particle mask or respirator with independent air supply

Skin Protection

wear protective gloves and clean body-covering clothing

Eye protection

safety glasses

9. Physical and chemical properties

Colour

white to yellowish

Form

crystalline powder

Odour

almost odourless, with sharp acidic, pleasant taste

Density

0.7-1.0 g/cm³

Solubility

~ 242 g/l, water (20 °C)

~ 376 g/l, water (40 °C)

ASCORBIC ACID



	~ 72.65 g/l, methy alcohol (20 °C)
	~ 20 g/l, ethanol absolute (20 °C)
	virtually insoluble, diethyl ether
	virtually insoluble, chloroform
	virtually insoluble, petroleum ether
	virtually insoluble, oils and fats
<i>pH value</i>	3 (0.5 % aqueous solution)
	2.1—2.6 (5 % aqueous solution)
<i>Dissociation constant</i>	pK1 = 4.7
	pK2 = 11.57 (water)
<i>Melting temperature</i>	190 to 192 °C (with partial decomposition)

10. Stability and reactivity

<i>Stability</i>	stable at room temperature under exclusion of humidity
<i>Conditions to avoid</i>	humidity heat
<i>Materials to avoid</i>	oxidizing agents, atmospheric oxygen, bases, metals, metal salts
<i>Note</i>	on prolonged storage, a yellow discolouration may occur through slow decomposition, which does not noticeably diminish biological activity, however in aqueous solutions ascorbic acid is very susceptible to oxidative decompositi- on, particularly in the presence of alkali resp. heavy metal ions

11. Toxicological information

<i>Acute toxicity</i>	LD50 11'900 mg/kg (oral, rat) LD50 8'000 mg/kg (oral, mouse) LD50 518 mg/kg (i.v., mouse)
<i>Local effects</i>	eye: may cause mild irritations mucous membranes: may cause mild irritations skin: may cause mild irritations; particularly in conjunction with humidity (perspiration)
<i>Chronic toxicity</i>	in predisposed individuals 4-12 g/d may cause urinary calculus
<i>Mutagenicity</i>	no suspicion of human mutagenicity
<i>Carcinogenicity</i>	not carcinogenic (several species)
<i>Reproduction toxicity</i>	not teratogenic, not embryotoxic
<i>Note</i>	oral uptake of up to 9 g per day does not produce any Serious toxic effects, however, even lesser quantities may

ASCORBIC ACID



cause diarrhea

RDA (recommended daily allowance): 60 mg

12. Ecological information

Inherent biodegradability

well inherently biodegradable

97 %, 5 d

100 %, 15 d

(Zahn-Wellens test, OECD No. 302 B)

Ecotoxicity

barely toxic for fish (rainbow trout)

LC50 (96 h) 1020 mg/l (OECD No. 203)

the inhibitory concentration relates to re-attachment to substrate (*Dreissena polymorpha*)

MIC (48 h) > 50 mg/l (nominal concentration)

Air pollution

observe local/national regulations

13. Disposal considerations

Waste from residues

observe local/national regulations regarding waste disposal
drain very small quantities into wastewater treatment plant
large amounts: incinerate in qualified installation with flue gas scrubbing

14. Transport information

Note

not classified by transport regulations

15. Regulatory information

Note

no classification and labelling according to EU directives

16. Other information

Use

additive for use in food and pharmaceuticals

feed additive

Biological activity

1 I.U. (international unit) of vitamin C corresponds to the activity of 50 µg of pure ascorbic acid

Safety-lab number

BS-7070

Edition documentation

changes from previous version in sections 1, 2, 4, 5, 7, 8, 10, 13, 16

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.