



Univar USA Inc Material Safety Data Sheet

MSDS No:

Version No:

Order No:

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

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PRODUCT NAME: ASCORBIC ACID

MSDS NUMBER: P1349VS

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ISSUED BY: 003984

Material Safety Data Sheet

Section 1 - Product and Company Identification

Product name ASCORBIC ACID, Vitamin C (Crystal and fine powder)

Distributor:
UNIVAR USA, INC.
17425 NE Union Hill Road
Redmond WA 98052
425-889-3400

Section 2 - Composition/Information on Ingredient

Characterization

Water soluble vitamin; pharmaceuticals, food and feed additive

Chemical name
L (+)-Ascorbic acid

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

Empirical formula
C6H8O6

Molecular mass

176.13 g/mol

Section 3 - Hazards identification

Most important hazards

No particular hazards known.

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)

Annotation:

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

Storage conditions

In closed containers

Protected from humidity

Below 30 deg 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

Threshold value air

10 mg/m³ (defined as 8-hour time-weighted average)

Analytcs

Sampling on glass fibre filter and gravimetric or chemical determination

Personal protective equipment

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

Color White to almost white

Form Crystalline powder or colorless crystals

Annotation:

| | |
|-----------------------|---|
| Odor | 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 Soluble in ethanol (96 percent) Virtually insoluble in ethyl ether Virtually insoluble in chloroform |
| PH value | 2.1-2.6 (5 % aqueous solution) |
| Dissociation constant | pKi = 4.17 pK2 = 11.57 (water) |
| Melting temperature | About 190 deg C (with decomposition) |

Section 10 - Stability and reactivity

Stability

Stable at room temperature under exclusion of humidity

Conditions to avoid

Humidity

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

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

Acute toxicity

- LD50 11'900 mg/kg (oral, rat)
- LD50 8'000 mg/kg (oral, mouse)
- LD50 518 mg/kg (i.v., mouse)

Local effects

- Eye: may cause irritations
- Mucous membranes: may cause irritations
- Skin: may cause irritations; particularly in conjunction with humidity (perspiration)

Chronic toxicity

- In predisposed individuals 4-12 g/d may cause urinary calculus

Mutagenicity

Annotation:

- 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

RDA (recommended daily allowance): 60 mg

Section 12 - Ecological information

Inherent biodegradability

Well inherently biodegradable

97 %, 5d

100 %, 15 d

Ecotoxicity

Barely toxic for fish (rainbow trout)

LC50 (96 h) 1020 mg/l

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

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

5

Air pollution

Observe local/national regulations

Section 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

Section 14 - Transport information

Note

Not classified by transport regulations

Section 15 - Regulatory information

Note

No classification and labeling according to EU directives

Annotation:

Section 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
mg of pure ascorbic acid

Reference literature

IS011014-1

General rules for preparation of chemical safety data sheet (CSDS)

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For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

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