

## Ascorbic acid

CAS Number: 50-81-7

Storage Temperature: Room Temperature

Product Number: A8100

### Product Description :

Appearance: White to off-White powder

Molecular formula:  $C_6H_8O_6$

Molecular weight: 176.1

Synonym: Vitamin C

Ascorbic acid is a powerful water-soluble antioxidant that is vital for the growth and maintenance of all body tissues. Vitamin C plays a vital role in the production of collagen, an important cellular component of connective tissues, muscles, tendons, bones, teeth, and skin. It catalyzes the hydroxylation of prolyl and lysyl residues in the collagen polypeptide chains, allowing interaction of the collagen subunits, adding structural stability to the collagen fibers. In addition, ascorbic acid has a detoxifying effect on liver.

It is also required for the synthesis of the neurotransmitters, norepinephrine and serotonin. It catalyzes the conversion of dopamine to norepinephrine and the conversion of tryptophan to serotonin. Ascorbic acid is also necessary for the synthesis of steroid hormones and carnitine, and for the conversion of cholesterol to bile acids. It has been shown to enhance iron bioavailability.

Ascorbic acid also promotes healthy cell development, proper calcium absorption, and normal cell growth and repair. It assists in the prevention of blood clotting and bruising, and strengthens capillary walls.

A review of the properties of L-ascorbic acid has been published. Test procedures used to determine vitamin C in juices and foods have been described.

### Preparation Instruction:

This product is soluble in water (50 mg/ml), yielding a clear solution.

### Storage/Stability:

Aqueous solutions are stable only in the absence of oxygen. Aqueous solutions are most stable at pH 5-6, and very unstable at alkaline pH. Degradation is markedly increased in the presence of transition metal ions, especially  $Cu^{2+}$  and  $Fe^{3+}$ . The first stage of oxidation of L-ascorbic acid to dehydroascorbic acid is reversible and the biological activity is retained. Further oxidation to 2,3-diketogulonic acid is not reversible and the activity is lost.