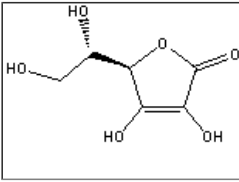
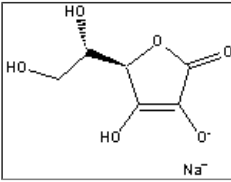


## L-Ascorbic Acid

### Structure:

Free Acid	Sodium Salt
	
<b>Molecular Formula:</b> C <sub>6</sub> H <sub>8</sub> O <sub>6</sub>	<b>Molecular Formula:</b> C <sub>6</sub> H <sub>7</sub> O <sub>6</sub> Na
<b>Molecular Weight:</b> 176.1	<b>Molecular Weight:</b> 198.1
<b>CAS #:</b> 50-81-7	<b>CAS #:</b> 134-03-2
<b>Equivalence:</b> one mg of free acid is equivalent to 1.1248 mg of sodium salt. <sup>2</sup>	<b>Equivalence:</b> one mg of the sodium salt is equivalent to 0.8890 mg of free acid. <sup>2</sup>

**Synonyms:** Vitamin C; Ascorbate; Sodium ascorbate; L-Xyloascorbic acid; 3-Oxo-L-gulofuranolactone (enol form); L-3-Ketothreohexuronic acid lactone; Antiscorbic vitamin; Cevitamic acid; Sodascorbate

**Physical Description:** White to slightly yellow crystalline powder

**pH:** Free Acid: 3 (5 mg/ml); 2 (50 mg/ml)<sup>1</sup>; Sodium Salt: 5.6 - 7.0 or higher.<sup>2</sup>

**pK1:** 4.17<sup>1</sup>

**pK2:** 11.57<sup>1</sup>

### Solubility:

*Free Acid:* Soluble in alcohol, water (1 g/3 ml; 80% w/v @ 100°C; 40% w/v @ 45°C), absolute ethanol (1 g/50 ml), glycerol (1 g/100 ml), or propylene glycol (1 g/20 ml); insoluble in ether, chloroform, benzene, petroleum ether, oils, fats, fat solvents.<sup>1</sup> Aqueous solutions are rapidly oxidized by air; the reaction is accelerated by alkalis, iron, and copper.<sup>1</sup>

*Sodium Salt:* Soluble in water (62 g/100 ml @ 25°C; 78 g/100 ml @ 75°C).<sup>2</sup> Aqueous solutions are unstable and subject to quick oxidation by air at pH > 6.0.<sup>2</sup> Solutions can be buffered with ascorbic acid solutions which have a pH of 2.3-2.5.<sup>2</sup>

**Description:** A vitamin widely distributed in the plant and animal kingdom. Used as an antimicrobial and antioxidant in foodstuffs.<sup>1,2</sup> A reductant for the isolation of chloroplasts.<sup>6</sup> Has an effect on the nonspecific immune system.<sup>8</sup> Preserves nitric oxide (NO) which may help prevent endothelial dysfunction.<sup>12</sup> Helps prevent and reverse the oxidative damage done to proteins and lipids as a result of cigarette smoke.<sup>14</sup>

**Note:** Oxidizes on exposure to light and air.

### Availability:

Catalog Number	Description	Size
100769	L-Ascorbic acid	25 g 100 g 500 g 1 kg
194586	L-Ascorbic acid, cell culture reagent, gamma-irradiated	100 mg
194628	L-Ascorbic acid, cell culture reagent	25 g 100 g 500 g 1 kg
152500	L-Ascorbic acid, ACS reagent grade	100 g 500 g
102890	L-Ascorbic acid, sodium salt	25 g 100 g

		500 g 1 kg
194629	L-Ascorbic acid, sodium salt, cell culture reagent	100 g 500 g 1 kg

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