



C-ESTA® Fact Sheet

Ascorbyl Palmitate

What is Ascorbyl Palmitate?

Ascorbyl Palmitate is a lipid (fat) soluble form of vitamin C. Ascorbyl Palmitate maintains all the physiologic activity of vitamin C without the problems that can be associated with ascorbic acid (the common water soluble form of vitamin C).

Ascorbyl Palmitate turns on cellular machinery. Human cell cultures designed to closely simulate the human body demonstrate this effect. By enhancing the cells' ability to function more effectively, cells are better able to repair any damage and generally "act" in a younger manner.

Ascorbyl Palmitate is a neutral pH (non-acidic) molecule. C-ESTA can be applied to any skin type without irritation as opposed to ascorbic acid, which has extremely low acidic pH and can create inflammation. C-ESTA does not sting or burn. C-ESTA can be used with glycolic acid, Retin-A and after laser resurfacing to assist in the recovery process.

Because Ascorbyl Palmitate is fat soluble, it penetrates the skin very rapidly and intersperses in the cell membrane. This affinity with the cell membrane results in tremendous antioxidant benefits and helps to prevent cellular aging such as:

- Cross linking of collagen
- Oxidation of proteins
- Lipid peroxidation

Ascorbyl Palmitate acts as an anti-inflammatory. The molecule was tested on several human inflammatory models. Studies demonstrated anti-inflammatory activity when Ascorbyl Palmitate is applied to psoriasis. Studies also show that Ascorbyl Palmitate can dramatically decrease UVB-induced erythema (sunburn) when applied topically. Ascorbyl Palmitate is more active than ascorbic acid. A study conducted at the University of North Carolina compared the efficacy of ascorbic acid and Ascorbyl Palmitate in the suppression of phorbol ester-induced tumour production (tumours nearly identical to those caused by UV light exposure). This study demonstrated that, while Ascorbyl Palmitate and ascorbic acid both have tumour suppressing activity, Ascorbyl Palmitate was 30 times more effective than ascorbic acid at 1/4 the dose. Ascorbyl Palmitate is extremely stable. Ascorbyl Palmitate is the only vitamin C molecule that maintains vitamin C activity for long periods of time. C-ESTA products have a normal two-year shelf life.

Ascorbyl Palmitate enhances vitamin E activity in the skin. Because Ascorbyl Palmitate can reside in the cell membrane, it can regenerate the vitamin E radical on a continuous basis. This is as opposed to ascorbic acid, which only interacts with vitamin E at the interface of the water-soluble and lipid components.

Ascorbyl Palmitate has been proven to be physiologically active in human cell cultures.

- Ascorbyl Palmitate shows greater activity than Ascorbic Acid in fibroblast growth and collagen production.
- Ascorbyl Palmitate shows greater activity than Ascorbic Acid at lower doses.

Ascorbyl Palmitate has better skin absorption and retention than Ascorbic Acid. In a study conducted by a division of Proctor & Gamble, skin absorption was compared between Ascorbyl Palmitate and ascorbic acid. At two hours, skin absorption of Ascorbyl Palmitate was far greater than ascorbic acid. At 24 hours, the amount of Ascorbyl Palmitate was over nine times greater.

Patients and physicians observe the following benefits:

- Thicker dermis
- Skin appears more resilient
- Skin appears plumper and thicker
- Decrease in the appearance of fine lines and wrinkles
- Skin appears softer, smoother and more refined
- Reflective quality of skin is enhanced
- Lessening of redness due to irritation and inflammation
- Facial skin appears more even toned
- Skin that tends toward sensitivity is far less reactive;
- Lessening of the appearance of telangiectasia

About DAE Complex®

DAE Complex is a powerful "antioxidant cocktail" that acts by stabilizing cell membranes. Stability of the cell membrane is critical to insuring that the cell functions at optimum levels. DAE Complex protects and enhances cellular activities. DAE Complex contains a proprietary delivery agent that acts as a penetration enhancer, enabling Ascorbyl Palmitate to penetrate to a more beneficial level. C-ESTA causes a noticeable improvement in the appearance of sagging and redundant skin. The delivery agent in DAE Complex is also a precursor of Acetyl Choline. Acetyl Choline is partly responsible for muscle tone. C-ESTA's DAE Complex stimulates Acetyl Choline resulting in the appearance of tighter and firmer skin with more defined facial contours.

Patients and physicians observed the following benefits:

- Increased muscle tone
- Lessening of the nasolabial fold
- Decreased redundancy of upper eyelids
- Overall appearance of tighter and more defined facial contours
- Overall appearance of skin IS younger and healthier