Ethyl Ascorbic Acid is ideal for:
- Cremes
- Lotions
- Gels

Product: Ethyl Ascorbic Acid
INCI name: 3-O-Ethyl Ascorbic Acid
EINECS #: N/A
CAS #: 86404-04-8

**Ethyl Ascorbic Acid** is a stable Vitamin C derivative with excellent skin brightening activity. Its chemical structure is unique in that the ethyl group forms an ether with the 3-hydroxy group of the ascorbic acid, which results in much higher stability. Other commercialized ascorbic acid derivatives are ethers at the 2-hydroxy position.

**Ethyl Ascorbic Acid** is a powerful inhibitor of melanogenesis. In contrast to ascorbyl glucoside or magnesium ascorbyl phosphate, which must undergo cleavage by hydrolytic enzymes for activity, it acts directly. Therefore, it is faster-acting than these materials and also shows a longer-term inhibitory effect.

Features:
- Excellent skin brightening activity.
- Active in both in vitro and in vivo tests.
- Much higher stability than other ascorbic acid derivatives.
- Good esthetics – not sticky or tacky.
- Has quasi-drug status in Japan.
- Direct-action
- Fast-action
- Long-lasting
- Multistep Inhibition
- Good touch

Applications:
- Excellent for use in whitening or anti-aging cosmetics such as gel, essence, latex and creams.
- Ethyl Ascorbic Acid is a unique ascorbic acid derivative (Japanese Quasi-drug) that satisfies both excellent stability and direct inhibition of melanogenesis.

**ETHYL ASCORBIC ACID TYPICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance @25 °C</td>
<td>White or very light yellow crystals or crystalline powder</td>
</tr>
<tr>
<td>Odor</td>
<td>Faint, characteristic</td>
</tr>
<tr>
<td>Color</td>
<td>White to very light yellow crystals</td>
</tr>
<tr>
<td>Recommended Use Level</td>
<td>0.5-10%</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Packaging</td>
<td>1-5kg</td>
</tr>
<tr>
<td>Product Code #</td>
<td>30-017</td>
</tr>
</tbody>
</table>

Lipo Chemicals, Inc. 207 19th Avenue, Paterson, NJ 07504 | T. 973.345.8600 | F. 973.345.8365 | www.lipochemicals.com
Ethyl Ascorbic Acid

Excellent Brightening Effect!

Tyrosinase Inhibition

In tyrosinase inhibition test, Ethyl Ascorbic Acid showed higher inhibition effect on tyrosinase activity than Ascorbyl glucoside did.

Ethyl Ascorbic Acid showed higher inhibition effect on tyrosinase activity between 3,4-dihydroxyphenylalanine (DOPA) and DOPAquinone than arbutin did.

Method: Test solutions (each concentration of Ethyl Ascorbic Acid, Arbutin, or Ascorbyl Glucoside) and Tyrosine or DOPA solution are prepared with McIlvaine buffer (pH=5.8), and each test solution is mixed with Tyrosine or DOPA solution and warmed at 37 oC for 5 min. Then, Mushroom Tyrosinase is add to mixed solution, and warmed at 37 oC for 20 min. The absorbance (475nm) is measured by using microplate reader.

Melanogenesis Inhibition

Effect of fast-action and long-lasting (B16 melanoma cell)

In melanogenesis inhibition test using B16 melanoma cells, Ethyl Ascorbic Acid showed greater inhibition of melanogenesis than Ascorbyl Glucoside and Magnesium Ascorbyl Phosphate (fast-acting).

The reason for fast-acting is considered to be that Ethyl Ascorbic Acid doesn’t need de-protection to act (direct-acting) while Ascorbyl Glucoside and Magnesium Ascorbyl Phosphate need de-protection with hydrolytic enzymes to be active.

Moreover, Ethyl Ascorbic Acid showed a longer-term inhibition effect on melanogenesis than Ascorbyl Glucoside and Magnesium Ascorbyl Phosphate did (long-lasting).

Test method: After the test sample (concentration 0.05%) is added, cultivate B16 melanoma cells for 24 hours, 48 hours, and 72 hours. Melanoma cells were removed from the medium and dissolved, and the absorbance at 405nm was measured with microplate reader for 24 hours, 48 hours, and 72 hours. The melanogenesis inhibition rate was calculated compared with the absorbance of control (melanoma cell with no sample addition).

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Actives & Treatments

EthylAscorbicAcid_SS