

### Kojic Acid SL

<b>Appearance:</b>	<b>Off White to White Crystalline Powder</b>
<b>Melting Point:</b>	<b>152 ~ 155°C</b>
<b>Ignition Residue (Sulfate):</b>	<b>0.5% Maximum</b>
<b>Loss on Drying:</b>	<b>2.0% Maximum</b>
<b>Heavy Metals (as PB):</b>	<b>20 ppm Maximum</b>
<b>Arsenic:</b>	<b>2 ppm Maximum</b>
<b>Assay:</b>	<b>Not less than 97.0%</b>
<b>CTFA/INCI Name:</b>	<b>Kojic Acid</b>
<b>Chemical Name:</b>	<b>5 - Hydroxy - 2 (hydroxymethy) - 4H - Pyran - 4 - one</b>
<b>CAS#:</b>	<b>501-30-4</b>
<b>Molecular Formula:</b>	<b>C6H6O4</b>
<b>Molecular Weight:</b>	<b>142.11</b>
<b>Applications:</b>	<b>Cosmetic - Skin Care Products</b>
<b>Use Level:</b>	<b>1 - 3%</b>
<b>Standard Packaging:</b>	<b>10 Kg. In Poly Bag</b>
<b>Storage &amp; Handling:</b>	<b>Store at room temperature in a cool, dark place.</b>

**Commentary:**

Kojic acid is soluble in water, ketones, alcohols, slightly soluble in chloroform, esters, and insoluble in benzene and hexane. It absorbs UV light at peak wavelength (max) of 268 nm.

Kojic Acid is produced by a fermentation process utilizing glucose as the carbohydrate source for a selected strain of aspergillus oryzae. The name is Japanese and comes from "koji" which means "culture of aspergillus oryzae (rice)." The appearance of Kojic Acid produced from this process ranges from clear, off white to pale yellow crystals.

Kojic Acid has an anti-microbial effect and is an inhibitor for tyrosinase, it helps depigmentation of the skin; and it forms chelates with metal ions. As a tyrosinase inhibitor, kojic acid was found to suppress isolated tyrosinase due to chelation of its copper. Kojic Acid has been found useful as an anti-speck agent, melanin formation inhibitor, UV - induced hyperpigmentation preventive agent for human skin.

In cosmetic products, kojic acid successfully fights age spots and pigmentation on face and body. It has increasingly been used as a skin - depigmenting agent in skin care products marketed in Japan since 1988.

In other areas, Kojic Acid has been used to prevent black spots in shrimp; browning of noodles; color - fading of cod roe or shrimp, and to preserve vegetables.



**Formulation Guidelines for Kojic Acid**

Kojic Acid may have potential color instability problems if not handled properly. The following guidelines are provided in order to minimize this potential problem.

- A.) Use pure, deionized water and Na2-EDTA. The potential color instability product of Kojic Acid can be Alleviated by keeping metal ion content as low as possible, especially iron ion. Kojic Acid is a chelating Agent for many metal ions, especially for iron. The reaction of Kojic Acid with Fe is used as a quantitative Analytical method for the determination of iron level in water, because the product, Kojic Acid - Fe complex Has a yellow color with high extinction coefficient. Any cosmetic formulation changes color instantly if Kojic Acid is added to the water phase which contains iron. Therefore, iron content in deionized water Should be controlled at a level as low as possible. In addition, Na2-EDTA should be added to water first Before any other ingredients are added.



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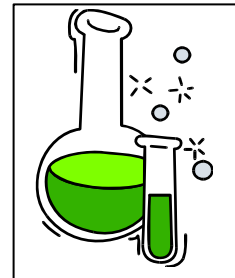
Page No. 2 of 2

## Kojic Acid SL.....

### Formulation Guidelines Continued.....

- B.) Incorporate into the formulation 0.05 - 0.1% ascorbic acid, 0.1 - 0.5% sodium bisulfite to stabilize the information.
- C.) The equipment used in manufacturing should be either stainless steel or glass lined. Heat and air contact should also be avoided as much as possible because it accelerates the oxidation of Kojic Acid and thus the color changes.

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