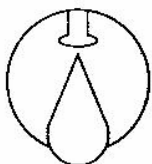
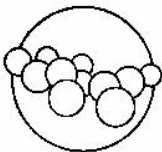
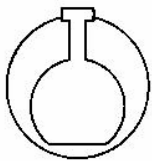
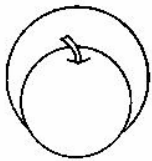
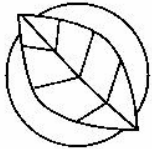
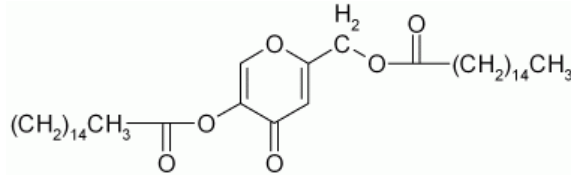




**THORNHILL**  
Advanced  
Research Inc.

## KOJIC DIPALMITATE

**CTFA Name:** Kojic Acid Dipalmitate  
**INCI Name:** Kojic Dipalmitate  
**Chemical Name:** 2-palmitoyloxymethyl-5-palmitoyloxy-  $\gamma$ - pyrone  
**CAS No.** 79725-98-7  
**Molecular Formula:**  $C_{38}H_{66}O_6$   
**Molecular Weight:** 618.9  
**Structural Formula:**



### SPECIFICATIONS:

**Appearance:** White powder  
**IR Spectrum:** Conforms to Reference  
**Solubility:** Soluble in oil, alcohol, mineral oil and esters (ethyl acetate)  
**Melting Point:**  $94^{\circ}C$   
**Moisture:** 1.0% max.  
**Heavy Metals:** 20 ppm max.  
**Assay (HPLC):** 98% min.

### PROPERTIES:

Kojic Dipalmitate is modified kojic acid derivative which not only overcomes the instability to light, heat and metallic ions, but also keeps the excellent property of inhibiting the activity of tyrosinase in the human skin and prevents the forming of melanin. It is more efficacious than straight kojic acid. Kojic Dipalmitate can produce excellent effects in even toning the skin, fighting age spots, pregnancy marks, freckles as well as general skin pigmentation disorders of face and body. Unlike kojic acid, which often causes product stability problems such as color changes, Kojic Dipalmitate offers excellent product stability without any color instability problems.

1. **Skin Lightening:** Kojic Dipalmitate offers more efficacious skin lightening effects. Compared with kojic acid, Kojic Dipalmitate markedly enhances the inhibitory effects on tyrosinase activity, which prohibits the formation of melanin. As a oil-soluble skin whitening agent, it is easier to be absorbed by skin.
2. **Light and Heat Stability.** Kojic Acid Dipalmitate is light and heat stable, while kojic acid tends to oxidize over time.
3. **pH Stability:** Kojic Acid Dipalmitate is stable within a wide pH range of 4-9, which provides flexibility to formulators.
4. **Color Stability.** Unlike Kojic Acid, Kojic Dipalmitate does not turn brown or yellow over time for two reasons. First, kojic acid is not stable to light and heat, and tends to oxidize, which results in color change (often yellow or brown). Second, kojic acid tends to chelate with metal ions (e.g. iron), which often results in color change. On the contrary, Kojic Acid Dipalmitate is stable to pH, light, heat and oxidation, and does not complex with metal ions, which lead to color stability.

### APPLICATIONS:

Skin care, sun care (anti-melasma), skin whitening/ lightening, treatment for pigmentary disorders such as age spots, etc.

### USAGE:

**Use level:** for skin care products: 1 - 7%  
Recommended use level for skin whitening: 3 - 5%

**Storage Conditions:** in tightly closed container at room temperature in a cool and dry place. Keep away from direct sunlight and strong heat.

**Packing:** In 0.5 kg aluminium foil bag / 20 kg fiber drum

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