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KOJIC DIPALMITATE

Appearance:	Slight Yellow to Off-White Glossy Powder
Melting Point:	92 - 95 °C
Loss on Drying:	2% Maximum
Heavy Metals (Pb):	20 ppm Maximum
Assay (HPLC):	95% Min.
CTFA/INCI Name:	Kojic Dipalmitate
Chemical Name:	2 palmitoyloxymethyl-5-palmitoyloxy-γ-pyrone
Synonym:	Kojic Acid Dipalmitate
Molecular Formula:	C ₃₈ H ₆₆ O ₆
Molecular Weight:	618.9
Applications:	Skin Care, Sun Care, Skin Whitening/Lightening, Treatment for Pigmentary Disorders such as Age Spots, etc.
Use Level:	1 - 5%
Stable at pH:	3 - 10
Storage Conditions:	Store at room temperature in a cool and dry place.
Standard Packaging:	0.5 Kg., 1 Kg. And 10 Kg. Container

Commentary:

Kojic Dipalmitate has an excellent property of inhibiting the activity of tyrosinase present in the human skin so as to inhibit the melanin formation. 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 the 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.

Features:

- a.) **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.
- b.) **Light and Heat Stability:** Kojic Dipalmitate is light and heat stable, while Kojic Acid tends to oxidize over time.
- c.) **pH Stability:** Kojic Dipalmitate is stable within a wide pH range of 3 - 10, which provides flexibility to formulators.
- d.) **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 Dipalmitate is stable to pH, light, heat and oxidation, and does not complex with metal ions, which lead to color stability.

Toxicology Properties:

Dermal Evaluation: (5% in mineral oil): 48 h Human Patch, 33 subjects: Results: 33/33 completely non-irritating.

Formulation Guidelines:

Kojic Dipalmitate is easy to incorporate in all types of formulations. It is oil-soluble, and can be easily melted into oil - phase @ 75 - 85°C, followed by immediate emulsification. Unlike Kojic Acid, which may not be compatible with some organic sunscreens and preservatives due to potential hydrogen bonding, Kojic Dipalmitate is compatible with virtually all ingredients and is especially advantageous for use in combination with sunscreens.

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24-Hour Fading Cream Formulation

Supplier	Part	Ingredient	INCI Description	Percent
	A	Deionized Water		58.00
JEEN Int'l	A	Propylene Glycol	Propylene Glycol	4.00
Sino Lion	A	Olevadew	Sodium PCA	10.00
JEEN Int'l	A	Pearl SL	Hydrolyzed pearl	5.00
JEEN Int'l	A	JEECHEM MAP	Magnesium ascorbyl phosphate	2.00
Croda	B	Crodamol PTO	Pentaerythrityl tetracaprylate/ tetracaprate	7.00
JEEN Int'l	B	JEECOL P	Emulsifying Wax	4.00
Croda	B	Incroquat Behenyl TMS	Behentrimonium methosulfate	3.00
JEEN Int'l	B	Kojic Dipalmitate	Kojic dipalmitate	2.00
BASF	C	Luvitol PE	Polyethylene	5.00
	D	Preservatives		Q.S.

Procedure: Combine Part A with mixing and heat to 80-85°C. Combine Part B with mixing and heat to 80-85°C. Add Part B to Part A, mixing with a homogenizer, continue homogenizing and cool to 60-65°C. Change to a sweep-blade mixer and cool to 35-40°C with mixing. Add Part C with mixing. When uniform, add Part D with mixing. Continue mixing and cool to desired fill temperature.

Comment: This stable, mild fading cream contains kojic dipalmitate and magnesium ascorbyl phosphate, a highly stable form of Vitamin C, and hydrolyzed pearl, an excellent source of nutrition for amino acids and minerals. The cream acts day and night to produce excellent skin-brightening effects and even-toned results without color-instability or skin-drying problems.

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Milk Lotion Formulation

Supplier		Ingredient	INCI Description	Percent
JEEN Int'l		Kojic Dipalmitate	Kojic Dipalmitate	4.00
JEEN Int'l		Stearic Acid TP NF	Stearic Acid	2.00
Sino Lion		Olevadew	Sodium PCA	10.00
JEEN Int'l	A	Pearl SL	Hydrolyzed pearl	5.00
JEEN Int'l	A	JEECHEM MAP	Magnesium ascorbyl phosphate	2.00
Croda	B	Crodamol PTO	Pentaerythrityl tetracaprylate/ tetracaprate	7.00
JEEN Int'l	B	JEECOL P	Emulsifying Wax	4.00
Croda	B	Incroquat Bhehenyl TMS	Behentrimonium methosulfate	3.00
JEEN Int'l	B	Kojic Dipalmitate	Kojic dipalmitate	2.00
BASF	C	Luvitol PE	Polyethylene	5.00
	D	Preservatives		Q.S.

Procedure: Combine Part A with mixing and heat to 80-85°C. Combine Part B with mixing and heat to 80-85°C. Add Part B to Part A, mixing with a homogenizer, continue homogenizing and cool to 60-65°C. Change to a sweep-blade mixer and cool to 35-40°C with mixing. Add Part C with mixing. When uniform, add Part D with mixing. Continue mixing and cool to desired fill temperature.

Comment: This stable, mild fading cream contains Kojic Dipalmitate and Magnesium Ascorbyl Phosphate, a highly stable form of Vitamin C, and hydrolyzed pearl, an excellent source of nutrition for amino acids and minerals. The cream acts day and night to produce excellent skin-brightening effects and even-toned results without color-instability or skin-drying problems.

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