

TECHNICAL DATA SHEET

Product Name: Ferulic Acid

INCI Name: Ferulic Acid

CAS Number: 1135-24-6

Chemical Classification: Carbohydrate, Phenol

Functional Category: Antioxidant, preservative, stabilizer ~ light stabilizer

IUPAC Name: (E)-3-(4-hydroxy-3-methoxy-phenyl)prop-2-enoic acid

Description: Ferulic acid is a natural antioxidant found in the cell walls of plants such as rice, wheat, oats, and some fruits. Chemically, it belongs to the hydroxycinnamic acid group and is renowned for its ability to neutralize free radicals, protecting the skin from oxidative stress caused by UV radiation and pollution. Its effectiveness is often enhanced when combined with other antioxidants like vitamins C and E, as it stabilizes their molecules and extends their efficacy. This synergy improves its performance in combating signs of aging, including fine lines, hyperpigmentation, and loss of skin firmness. Ferulic acid also has mild exfoliating properties, helping to remove dead surface skin cells, promoting a brighter and more even complexion. It is valued for its anti-inflammatory properties, making it suitable for sensitive skin or conditions such as rosacea and acne. In cosmetic formulations, ferulic acid is used at low concentrations, typically between 0.5% and 1%, as higher doses are prone to oxidation and may cause irritation. To preserve its stability, it is usually combined with UV filters and packaged in dark, airtight containers. It appears as a white or light brown crystalline powder with a characteristic odor. The active substance content is no less than 98%, ensuring high purity. Its specific gravity is approximately 1.16, with ash content below 0.1%, indicating minimal impurities. Low moisture loss (<0.5%) confirms its stability and quality during storage. Ferulic acid is highly soluble in DMSO and ethanol (39 mg/mL), sparingly soluble in natural oils, and insoluble in water (0.78 g/L). It requires emulsifiers for use in aqueous formulations and solubilizers for better stability in oil phases. Ethoxydiglycol is a suitable solvent for dissolution.

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Benefits:

- Potent natural antioxidant (protects skin from oxidative damage)
- Prevents and corrects signs of skin aging
- Used for treating hyperpigmentation and age spots
- Brightens skin (inhibits tyrosinase, slows melanin production)
- Provides protection against phototoxic effects of UVA rays

Application: Ferulic acid is used in cosmetic formulations at concentrations between 0.5% and 1%, optimal for efficacy and minimizing irritation risks. In serums, it is often combined with antioxidants like vitamins C and E to protect the skin from oxidative stress and brighten the complexion. In creams and lotions, it is typically included in the oil phase due to its partial lipophilicity, enabling better dispersion in lipid bases. To preserve its stability, products containing ferulic acid are often formulated with UV filters and packaged in dark, airtight containers. It is recommended to add ferulic acid during the final formulation stages at lower temperatures to prevent degradation. Higher-concentration products, such as professional treatments, should be patch-tested due to potential sensitivity. For external use only.

Raw Material Source: Rice Bran (Sativa Linne, Gramineae)

Extraction Process: Extracted and refined from rice bran (Sativa Linne, Gramineae).

Animal Testing: Not tested on animals

GMO Status: Non-GMO

Vegan Status: Does not contain animal-derived components

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