

Ferulan Active

Description

Ferulan Active is a solution containing 10 % ferulic acid of synthetic origin. Ferulic acid usually exist as the trans isomer, while in solution slow isomerization results in an equilibrium ratio of 23 % cis and 77 % trans. The multifunctional effects of ferulic acid make this an active of high interest. Ferulic acid and its esters, like chemical sunscreen agents, have a phenyl-2-propene structure. They have a vinyl group at the benzene ring, which is strongly absorbing UV-light. By this absorption the stabilized phenoxy radical will be formed and a cis-trans-isomerization will occur. Therefore, ferulic acid in barks, leaves and seeds is protecting the plant from the harmful rays of sunlight. An addition, ferulic acid is able to prevent the development of radicals started by oxygen and UV-radiation. Each reactive radical Lx or L-O-O-x (lipoperoxyl radical) which might get contact with a molecule of ferulic acid abstracts a hydrogen atom from the phenolic group of ferulic acid. A phenoxy radical is generated, which shows a high resonance stabilization. Therefore, ferulic acid is approved as an antioxidant agent in cosmetics and in food. The anti-inflammatory effectiveness of ferulic acid is based on its antioxidative potential. Ferulic acid furthermore shows very good MIC values for gram-positive and gram-negative bacteria.

Ferulic acid is very difficult to formulate, which is one of the reasons we developed Ferulan Active. The solvents and emulsifiers used ease the incorporation of Ferulan Active in the water or oil phase of a cosmetic formulation. In addition, the ingredients ideally support the multi-active and multifunctional efficacy of ferulic acid.

Efficacy

- shows the efficacy of a sunscreen (UV-A and UV-B absorption)
- acts as a deodorant
- acts as an antioxidant and protects from damages due to free radicals
- reduces inflammations and counteracts erythema development
- acts antimicrobial in cosmetic formulations
- soothes the skin

Appearance

clear, slightly yellow, orange to red solution

INCI

Ethoxydiglycol, Glycerin, Ferulic Acid, PEG-40 Hydrogenated Castor Oil, Oryza Sativa Bran Oil

Registration

CAS-No.:

Ethoxydiglycol.....111-90-0
Glycerin.....56-81-5
Ferulic Acid.....1135-24-6
PEG-40 Hydrogenated Castor Oil.....61788-85-0
Oryza Sativa Bran Oil.....68553-81-1

EC-No.:

Ethoxydiglycol.....203-919-7
Glycerin.....200-289-5
Ferulic Acid.....214-490-0
PEG-40 Hydrogenated Castor Oil.....polymer
Oryza Sativa Bran Oil.....271-397-8

**Nature needs no cosmetics,
but cosmetics need nature**



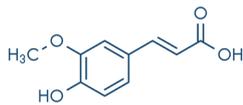
Ferulan Active

Preservatives / Stabilizers

preservatives.....	none
stabilizers:	
Ethoxydiglycol.....	51 - 100 %
Glycerin.....	11 - 50 %

Characteristics

content of Ferulic Acid.....	>= 10 %
content of water.....	<= 5 %
density at 20°C.....	1.08 - 1.15 g/ml
pH (1 % sol. in Ethanol:water 1:1).....	4.0 - 5.5



ferulic acid

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molecular formula.....	C ₁₀ H ₁₀ O ₄
synonym.....	4-hydroxy-3-methoxycinnamic acid, 3-(4-hydroxy-3-methoxyphenyl)-2-propenoic acid

Application

high quality cosmetic products
daily care products
face masks
creams and gels
ampoules
body lotions
sun protection

Application concentration

skin care formulation.....2 - 5 %

Incorporation

In cold water, a solution of 2 % or 5 % of Ferulan Active results in a milky precipitate of ferulic acid. A mixture of 90 % Ferulan Active and 10 % water seems to be stable. In a mixture of 20 % ethanol and 80 % water 2 % Ferulan Active can be solved to a stable solution. If the content of Ferulan Active is increased to 5 % some ferulic acid will crystallize in form of needles. A mixture of 50 % Ferulan Active and 50 % propylene glycol or 50 % glycerin is completely stable. 2 % Ferulan Active is clear soluble in Jojoba oil. Up to 5 % Ferulan Active is insoluble in the following plant oils: amaranth oil, avocado oil, caprylic / capric triglyceride, coconut oil, shea oil, sunflower oil. The result is a turbid solution or partly phase separation. 5 % Ferulan Active is insoluble in jojoba oil (turbid). Up to 5 % Ferulan Active can be solved in different alcoholethersulfates (content 25 - 35 %). Ferulan Active can be incorporated easily into a 10 % solution of amphoteric surfactants (content approx. 30 %).

Toxicology

non hazardous in normal use concentration

Storage & Shelf life

Ferulan Active should be stored in a dry and light protected place at 10 - 25°C.

In closed original containers the shelf life is five years.