

Azelaic Acid natural

Description

Azelaic acid (AzA) is an organic compound with the formula $\text{HOOC}(\text{CH}_2)_7\text{COOH}$. This saturated dicarboxylic acid was first detected in rancid fats and can be found in dietary sources, such as whole grains. Azelaic acid is industrially produced by the ozonolysis of oleic acid. The side product is nonanoic acid. It is produced naturally by *Malassezia furfur* (also known as *Pityrosporum ovale*), a yeast that lives on normal skin.

In plants, azelaic acid serves as a „distress flare“ involved in defense responses after infection. It serves as a signal that induces the accumulation of salicylic acid, an important component of a plant's defensive response. The mechanism of action in humans is thought to be through the inhibition of hyperactive protease activity. Azelaic acid is used to treat mild to moderate acne, both comedonal and inflammatory acne. It works by killing acne bacteria that infect skin pores. It also decreases the production of keratin, which is a natural substance that promotes the growth of acne bacteria. Azelaic acid is also used as a topical gel treatment for rosacea, due to its ability to reduce inflammation. It clears the bumps and swelling caused by rosacea. In topical pharmaceutical preparations and scientific research AzA is typically used in concentrations between 15 % and 20 %. At this concentration, it is considered to be as effective as benzoyl peroxide 5 %, tretinoin 0.05 %, erythromycin 2 %, and oral tetracycline at 500 mg – 1000 mg. USA Cosmetic Ingredient Review Expert Panel concluded that azelaic acid is safe in the present practices of use and concentration since 2012. In a comparative review of effects of topical AzA, salicylic acid, nicotinamide, sulfur, zinc, and alpha-hydroxy acid, AzA had more high-quality evidence of effectiveness than the rest. Azelaic acid is used for treatment of skin pigmentation, including melasma and post inflammatory hyperpigmentation, particularly in those with darker skin types. It has been recommended as an alternative to hydroquinone. As a tyrosinase inhibitor, azelaic acid reduces synthesis of melanin.

Efficacy

- helps to fight acne
- normalizes sebum production
- inhibits melanin synthesis
- brightens the skin and enables even skin tone
- reduces inflammations
- acts as an antioxidant
- helps to fight rosacea

Appearance

white powder

INCI

Azelaic Acid

Registration

CAS-No.....123-99-9

EC-No.....204-669-1

Raw material approved by ECOCERT GREENLIFE,
conform to the COSMOS Standard.



Nature needs no cosmetics,
but cosmetics need nature

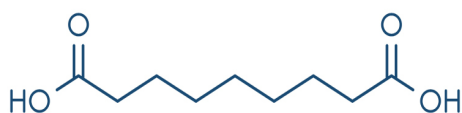
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Preservatives / Stabilizers

none

Characteristics

melting point melting point.....104 - 109°C
loss on drying.....<= 0.5 %
assay (titration).....>= 99.0 %
particle size.....D90 < 20 µm, D50 < 10 µm



azelaic acid

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molecular weight.....188.22 g/mol
molecular formula.....C₉H₁₆O₄
synonyms.....Nonanedioic acid,
1,7-Heptandicarboxylic acid

Application

daily cosmetic products
creams and lotions
face masks
gels and ampoules

Application concentration

Please check your local regulations
in Germany:.....1 - 10 % (cosmetic products)
.....15 - 20 % (prescription drugs)

Incorporation

Up to 10 % Azelaic Acid natural is insoluble in water at RT. When heated to > 50°C 1 % is soluble, 10 % is partially soluble at 70°C. 1 - 10 % is soluble in ethanol, ethanol/water 1:1, pentylene glycol and glycerin at RT. It is recommended to add ethoxy diethylene glycol or other solubilizers to facilitate solutions. Alternatively, disperse it in diglycols or waters and then incorporate the above dispersing liquids to the formulation in the final stage (participate in homogeneous steps) when temperature is below 45°C.

Azelaic Acid natural is cold and heat process up to 80 - 90°C capable.

A pH of 4.5 - 5.5 is recommended (up to 6.5 is acceptable).

Toxicology

non hazardous in normal use concentration
pure raw material can cause skin irritation and /
or serious eye irritation

Storage & Shelf life

Azelaic Acid natural should be stored in original sealed containers in a dry, well-ventilated and light protected place at temperatures between 10 - 25°C.

In closed original containers the shelf life is 36 months.