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Zeolite

Product Name: Zeolite ultra-fine clay

INCI name: Clinoptilolite Powder

CAS: 1318-02-1

Chemical classification: Inorganic compound

Functional category: Extender, filler

Description: Zeolite is a natural mineral whose crystal structure features a unique network of cavities and channels, resembling a honeycomb shape. This structure enables zeolite to absorb various molecules, such as water, toxins, and ions, through the process of ion exchange. This means zeolite can attract and retain positively charged particles (cations), such as heavy metals, while simultaneously releasing other beneficial ions, such as sodium or calcium. It forms following volcanic eruptions when volcanic lava comes into contact with alkaline groundwater. In cosmetics, zeolite is used for its ability to bind and remove impurities, toxins, and excess sebum from the skin's surface. Thanks to this property, it is frequently added to facial masks, scrubs, and products intended for deep pore cleansing. In addition to aiding skin detoxification, zeolite plays a role in balancing sebum production, thereby contributing to the reduction of oiliness and acne breakouts. Its alkaline nature allows for the neutralization of excessive skin acidity, creating favorable conditions for the regeneration of the skin's protective lipid layer, which is crucial for preserving its natural barrier. Through these properties, zeolite improves the overall condition of the skin, leaving it cleaner, more balanced, and healthier. Zeolite also possesses mild abrasive characteristics, making it suitable for formulations that act as physical exfoliants. Because of its gentleness on the skin, it is frequently used in products for sensitive skin types. Furthermore, thanks to its ion-releasing ability, zeolite has the potential to improve microcirculation and contribute to skin revitalization, leaving it healthier and more radiant. When used in cosmetic formulations, zeolite is most commonly added in the form of a fine powder. It does not clog pores, making it suitable for all skin types, including skin prone to irritation. It is especially valued in formulations that do not contain artificial fragrances and additives, as it contributes to the natural and functional properties of the product. It is a natural, fine, light pink

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to brown powder rich in silicon, calcium, potassium, and iron. The particle size is below 15 microns. It suspends in water, and the pH of a 20% suspension is 8–8.5.

Benefits:

- Removes toxins and impurities from the skin.
- Absorbs excess sebum and reduces oiliness.
- Deeply cleanses pores and prevents them from clogging.
- Balances sebum levels and reduces acne breakouts.
- Neutralizes skin acidity thanks to its alkaline nature.
- Assists in the regeneration of the skin's protective lipid layer.
- Keeps the skin clean, healthy, and balanced.

Method of use: Zeolite is used in cosmetics in various concentrations depending on the type of product and the desired effect. In facial masks, it is typically added at a concentration of 10% to 30% to provide deep cleansing and skin detoxification. In exfoliating products, it is used in a similar range, but often in smaller quantities if serving as a mild abrasive. For facial cleansers, such as gels or foams, its concentration may be lower, around 5% to 10%, as the focus in these formulations is on daily cleansing without excessive drying. When used in powder products, such as dry shampoos or deodorants, it can be applied in higher concentrations, up to 50%, as it effectively absorbs moisture and unpleasant odors. Zeolite must be finely ground into a powder before being added to the formulation to achieve a uniform texture and avoid the creation of coarse particles that could irritate the skin. For sensitive skin formulations, testing lower concentrations is recommended to ensure the product is gentle and suitable for daily use. For external use only.

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Natural or synthetic ingredient: Zeolite is a natural ingredient. It forms through natural geological processes, including volcanic eruptions and the interaction of lava with alkaline groundwater. In cosmetic products, it is most commonly used in its natural form, although it may be further processed to achieve desired characteristics such as particle size and purity.

Safety of application: The Cosmetic Ingredient Review (CIR) published a safety assessment report on zeolite in cosmetic products in 2003. In this report, the CIR concluded that zeolite is safe for use in cosmetics, with the caveat that good manufacturing practices should be followed and the inhalation of products containing zeolite in powder form should be avoided. Recommended concentrations of zeolite in cosmetic formulations vary depending on the product type and its intended use, but typically range between 1% and 10%. For example, in facial masks and scrubs, concentrations may be higher, while in daily creams and lotions they are usually lower. It is important to note that formulations should be tested to ensure their safety and efficacy for end users.

Animal testing: The substance has not been tested on animals.

GMO: Non-GMO

Vegan: Does not contain animal-derived components

Country of origin: Turkey