

TECHNICAL DATA SHEET

Product Name: Olive Leaf Powder Standardized Oleuropein 40%

INCI Name: Olea Europaea (Olive) Leaf Extract

CAS: 84012-27-1

Synonyms: Olive Leaf Extract; Olea Europaea Leaf Extract; Olive Leaf Powder Extract; Olive Leaf Oleuropein Extract; Oleuropein 40% Extract

Product Quality: Standardized olive leaf extract containing 40% oleuropein.

IUPAC Name: Not applicable to the extract as a whole because it represents a complex mixture of naturally occurring bioactive compounds. The main standardized component, oleuropein, is an individual chemical compound.

Description: Standardized Olive Leaf Powder - Oleuropein 40% is a highly concentrated botanical raw material obtained from olive leaves (*Olea europaea* L.), with a laboratory-confirmed oleuropein content of at least 40%. Oleuropein is the dominant secoiridoid polyphenol of olive leaf and the principal contributor to its antioxidant potential. In addition to oleuropein, the extract naturally contains other phenolic components, including hydroxytyrosol, verbascoside, luteolin and its glycosides, apigenin-7-O-glucoside, and other accompanying polyphenols. Owing to its high content of these compounds, the extract is suitable for cosmetic formulations intended for antioxidant protection, preservation of a healthy skin appearance, and care of skin exposed to external factors.

Physicochemical Properties: Fine, homogeneous powder with a characteristic greenish-brown to brown color, a mild botanical odor, and a pronounced polyphenolic character. Standardized to contain at least 40% oleuropein. The extract shows limited to moderate solubility in water; for a commercial extract containing 40% oleuropein, approximate solubility of 5-10 g/L is reported, therefore pre-dissolution or careful dispersion is recommended at higher concentrations. As a polyphenolic botanical raw material, it should be protected from prolonged exposure to light, moisture, air, and elevated temperature.

Bioactive Compounds: The main bioactive component of the extract is oleuropein, a secoiridoid glycoside characteristic of olive and the most abundant phenolic compound in *Olea europaea* leaves. Standardization to 40% provides a high and controlled content of this compound. Oleuropein is structurally related to hydroxytyrosol and elenolic acid and is known for its pronounced antioxidant potential. In addition to oleuropein, hydroxytyrosol represents a significant accompanying polyphenol, a simple phenol with high antioxidant activity that may occur naturally in the extract and may also be formed through oleuropein degradation. Verbascoside is a phenylethanoid glycoside and one of the characteristic polyphenolic constituents of olive leaf, contributing to the overall antioxidant profile of the extract. The flavonoid fraction consists primarily of

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luteolin-7-O-glucoside and apigenin-7-O-glucoside, together with smaller amounts of luteolin, rutin, and other flavonoids. These compounds complement the activity of the secoiridoid fraction and contribute to the extract's overall capacity to neutralize reactive oxygen species. Smaller amounts of tyrosol, catechin, caffeic acid, vanillic acid, and other phenolic acids may also be present, with their relative proportions depending on olive variety, harvest time, drying method, extraction solvent, and technological process.

Benefits:

- Antioxidant activity: helps neutralize free radicals and protect the skin from oxidative stress.
- Protection against premature skin ageing: contributes to preserving firmness, elasticity, and a healthy skin appearance.
- Soothing action: contributes to reducing signs of irritation and skin discomfort.
- Protection against external factors: helps preserve skin exposed to pollution and other environmental factors.
- Support for a healthy skin appearance: contributes to maintaining an even, well-cared-for, and revitalized appearance.

Usage: Standardized Olive Leaf Extract with 40% oleuropein is used in formulations containing a water phase. Due to its limited solubility, pre-dissolution or dispersion in a small amount of water, glycerin, or another suitable hydrophilic phase is recommended before incorporation into the final formulation. Water solubility may be lower than that of less highly standardized extracts, so it is advisable to verify dissolution at the intended concentration before preparing a larger batch. If the powder does not dissolve satisfactorily in water, a hydroalcoholic water-ethanol system may be used, as ethanol can significantly improve the solubility of polyphenolic components of olive leaf extract. In cosmetic formulations, the extract may also be pre-dispersed in glycerin or propanediol, followed by gradual addition of the aqueous phase. This procedure facilitates uniform wetting of the powder and reduces lump formation, but does not necessarily result in complete dissolution. If an insoluble fraction remains, the extract may be used as a stable dispersion, provided that no pronounced sedimentation occurs during storage. For completely clear serums or toners, such a raw material may be technologically unsuitable without an additional solubilization system. Due to the high polyphenol content, addition during the final, cool phase of processing is recommended, preferably at temperatures below approximately 40 °C. For facial serums and concentrates, approximately 0.1-1.0% may be used; for creams and emulsions, 0.2-1.0%; and in more intensive antioxidant and anti-age formulations, approximately 0.5-1.0%. In toners, essences, and aqueous gels, 0.1-0.5% is recommended; in preparations intended for sensitive skin, 0.1-0.5%; in face masks, 0.2-1.0%; while in body products and hair and scalp preparations, approximately 0.1-0.5% may be used. For most formulations, a practical starting concentration is 0.2-0.5%. At higher concentrations, product color, pH, compatibility with other ingredients, and final formulation stability should be evaluated, because the high content of oleuropein and other polyphenols may influence color and

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organoleptic properties.

Animal Testing: In accordance with EU Regulation (EC) No. 1223/2009 on cosmetic products, this substance has not been tested on animals. Safety assessment is based on available toxicological data, scientific literature, and validated alternative testing methods (in vitro and in silico). In silico is a term used for testing and assessment methods carried out using computer models and simulations, rather than in laboratory testing on living organisms (in vivo) or cell cultures (in vitro). This note confirms compliance with the animal testing ban and serves solely for informational purposes for further use of the raw material in cosmetic formulations.

GMO: Non-GMO

Vegan: Contains no animal-derived components.

Country of Origin: China



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