

TECHNICAL DATA SHEET

INCI Name: Ocimum Basilicum (Basil) Leaf Extract (10:1), Helianthus Annuus Seed Oil, Prunus Amygdalus Dulcis Oil, Tocopherol

CAS: 84775-71-3, 8001-21-6, 8007-69-0, 59-02-9

Chemical Classification: Mixture (botanical extract in vegetable oils with antioxidant additive)

Functional Category: Skin conditioning agent ~ occlusive, Skin conditioning agent ~ emollient, Antioxidant

Type of Maceration: Ultrasonic maceration, cold-process method

Method of Production: Basil Leaf Infused Oil is obtained by ultrasonic extraction using ultrasound frequencies of 20–25 kHz. At these frequencies, ultrasonic waves generate microscopic cavitation bubbles in the oil containing the plant material, creating a phenomenon known as cavitation. The implosion of these bubbles produces micro-environments of high temperature and pressure that mechanically disrupt plant cell walls, thereby releasing active components such as essential oils, flavonoids, carotenoids, and sterols. Extraction is carried out at 25 °C to preserve thermolabile compounds. As the carrier oil, cold-pressed linoleic-type sunflower oil is used rich in essential linoleic acid and with a smaller proportion of oleic acid combined with sweet almond oil. The addition of vitamin E as a natural preservative maintains freshness and stability while keeping the oil entirely natural. During extraction, the suspension vessel is cooled in an ice-water bath to prevent overheating. Ultrasonic treatment is applied intermittently. After extraction, the infused oil is filtered to obtain a clear, stable product. This method is more efficient than traditional maceration, providing higher extraction yield and shorter processing time.

Description: Basil Leaf Infused Oil is a cosmetic ingredient produced by ultrasonic maceration of *Ocimum basilicum* L. leaves in a blend of cold-pressed sunflower and almond oils, stabilized with tocopherol as an antioxidant. Owing to its content of natural antioxidants and volatile compounds, the infusion exhibits mild anti-inflammatory and refreshing effects on the skin, particularly beneficial for sensitive or irritated skin. The oil base provides occlusive properties, preventing transepidermal water loss and improving surface hydration. It also acts as an emollient softening, soothing, and nour-

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ishing the epidermis making it suitable for formulations intended for daily care of dry, irritated, or inflammation-prone skin. This infused oil is widely used in natural and plant-based cosmetics such as creams, body lotions, emulgels, massage oils, and lip balms. Due to its gentle, plant-derived composition, it is considered safe even for use in products intended for sensitive regions, such as the area around the eyes, when applied in appropriate concentrations.

Bioactive Compounds: Basil Leaf Infused Oil contains a range of bioactive molecules contributing to its cosmetic efficacy. The most significant are polyphenolic acids, particularly rosmarinic acid, known for its potent anti-inflammatory and antioxidant properties that reduce oxidative stress and skin irritation. Caffeic and ferulic acids further protect the skin from free radicals and photo-oxidative damage. Among flavonoids, apigenin, luteolin, and orientin are notable for stabilizing capillaries, reducing redness, and exhibiting anti-edematous effects, making the oil useful for inflammatory or reactive skin conditions. Tannins provide a mild astringent effect and improve skin texture uniformity. Although present in lower concentrations than in essential oil, traces of eugenol, linalool, myrcene, and methyl chavicol (estragole) contribute to a subtle anti-microbial action and a pleasant aromatic profile. Saponins and phytosterols, particularly β -sitosterol, aid in restoring the epidermal barrier and maintaining skin elasticity. This complex combination of phytochemicals makes basil infused oil a functional emollient with pronounced antioxidant, soothing, and protective properties ideal for formulations targeting sensitive, inflamed, or dehydrated skin.

Benefits:

- Reduces inflammation and oxidative stress (rosmarinic acid).
- Stimulates microcirculation and provides antioxidant protection (caffeic acid).
- Shields against UV damage and free radicals (ferulic acid).
- Soothes and reduces redness (apigenin).
- Strengthens capillaries and provides anti-inflammatory support (luteolin).
- Regenerates the skin and slows down aging (orientin).
- Tightens pores and refines texture (tannins).
- Improves absorption and cleansing (saponins).
- Reinforces the skin barrier and enhances elasticity (β -sitosterol).

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Application: Basil Leaf Infused Oil is incorporated during the oil phase, typically at the final mixing stage at low temperatures to preserve phytochemical stability. It can be used in creams, lotions, oil-based serums, lip balms, facial and body oils, and emulsion gels. Recommended usage levels range from 1% to 10%, depending on product type, target function, and concentration of other actives. For daily care products such as moisturizers and lotions, lower concentrations provide emollient and soothing benefits, whereas higher levels are suitable for dry, irritated, or sensitive skin formulations. In products for sensitive regions such as the eye area, moderate concentrations are advised, with careful adjustment of the overall lipid phase to ensure compatibility with reactive skin.

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

GMO Status: Non-GMO.

Vegan Status: Contains no animal-derived ingredients.

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