

TECHNICAL DATA SHEET

Product name: Comfrey Infused Oil

INCI name: Symphytum Officinale Root Extract, Helianthus Annuus Seed Oil, Prunus Amygdalus Dulcis Oil, Tocopherol

CAS: 84696-05-9, 8001-21-6, 8007-69-0, 59-02-9

Synonyms: Comfrey, Common comfrey, True comfrey, Blackwort, Knitbone, Slippery root, Boneset, Consoude officinale, Beinwell, Wallwurz, Consolida maggiore

Chemical classification: Mixture (blend of plant extract and oils)

Functional category: Skin care agent ~ occlusive, Skin conditioning agent ~ emollient, Antioxidant

Type of maceration: Ultrasonic maceration, cold-process method

Method of production: Comfrey infused oil is obtained by ultrasonic extraction using ultrasound frequencies of 20–25 kHz. At these frequencies, ultrasonic waves generate microscopic bubbles in the oil containing the extract, leading to a phenomenon known as cavitation. Cavitation creates localized conditions of high pressure and temperature around collapsing bubbles. These conditions mechanically disrupt plant cell walls, releasing active components such as essential oils, flavonoids, carotenoids, and sterols. Extraction is performed at 25°C to preserve the stability of thermolabile compounds. As a carrier oil, cold-pressed sunflower oil (linoleic type), rich in essential linoleic acid with a lower content of oleic acid, is used together with sweet almond oil. The addition of vitamin E as a natural antioxidant helps maintain freshness and quality while preserving the natural profile of the oil. During extraction, the vessel is cooled in an ice-water bath to prevent temperature increase. Ultrasonic treatment is applied in short intervals with pauses. After the process, the infused oil is filtered to obtain a clear and usable product. This method is more efficient than traditional maceration, enabling better raw material utilization and shorter extraction time.

Description: Comfrey infused oil is a cosmetic ingredient with pronounced regenerative, soothing, and protective effects on the skin and scalp. It acts as an emollient, softening and hydrating the skin, improving elasticity, and supporting the natural barrier function.

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.

TECHNICAL DATA SHEET

It is particularly suitable for dry, sensitive, and irritated skin, as well as for treatments requiring support in recovery after damage or cracking. On the scalp, it helps reduce dryness and flaking, maintains hydrolipid balance, and provides a nourishing feel without excessive greasiness. It is suitable for formulations such as creams, balms, serums, oil blends, and masks, as well as products intended for post-exposure skin care. It shows good tolerance and compatibility with most vegetable oils, antioxidants, and active ingredients used in dermocosmetics.

Bioactive compounds: The root of *Symphytum officinale* contains a complex set of bioactive compounds comprising several phytochemical groups, each contributing to its biological effects. Allantoin stands out as a key component, a heterocyclic urea known for stimulating epithelialization, accelerating tissue granulation, and supporting skin regeneration. Phenolic acids are also present, including rosmarinic, chlorogenic, caffeic, and ferulic acids, with strong antioxidant and anti-inflammatory properties. The flavonoid complex includes compounds such as apigenin, quercetin, luteolin, and kaempferol derivatives, providing antioxidant, capillary-protective, and soothing effects. The chemical profile also contains tannins, polyphenols with astringent properties that help protect the skin surface and provide a mild antiseptic effect. The lipid fraction includes phytosterols such as β -sitosterol and stigmasterol, which support the skin lipid barrier and exhibit mild anti-inflammatory activity, as well as triterpenes with protective and soothing properties. Additionally, small amounts of carotenoids contribute to antioxidant capacity, while polysaccharides and mucilage bind water and form a protective film on the skin surface, reducing irritation.

Benefits:

- Hydrates and softens the skin
- Forms a protective occlusive layer that reduces moisture loss
- Soothes irritated and sensitive skin, supporting natural regeneration
- Provides antioxidant protection
- Improves skin elasticity and smoothness with regular use

Directions for use: Comfrey infused oil is used in a wide range of cosmetic products, including creams, balms, serums, and oil blends, where it is incorporated into the oil phase to ensure maximum stability and preserve bioactivity. In leave-on products such as nourishing creams, butters, and balms, the recommended concentration typically

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.

TECHNICAL DATA SHEET

ranges from 3–10%. In regenerative oil serums and massage blends, it may be used at higher levels depending on the desired sensory profile and activity. In rinse-off products such as bath oils and cleansing milks, it is usually applied at lower concentrations, around 1–3%, to maintain a mild and soothing effect without excessive greasiness. Due to its composition, it can be combined with other vegetable oils, antioxidants, and active ingredients. It is recommended to add it during the final cold-process phase or at temperatures below 40°C to preserve thermolabile components.

Animal testing: In accordance with current European regulation (Regulation (EC) No. 1223/2009 on cosmetic products), the substance has not been tested on animals. The safety assessment is based on available toxicological data, scientific literature, and validated alternative testing methods (in vitro and in silico). The term “in silico” refers to methods performed using computer models and simulations rather than on living organisms (in vivo) or cell cultures (in vitro). This statement confirms compliance with the ban on animal testing and serves informational purposes for further use in cosmetic formulations.

GMO: Non-GMO

Vegan: Does not contain ingredients of animal origin

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.