

TECHNICAL DATA SHEET

Product Name: Yarrow Extract

INCI Name: Glycerin, Aqua, Achillea Millefolium Extract, Benzyl Alcohol, Dehydroacetic Acid

CAS Numbers: 56-81-5, 7732-18-5, 84082-83-7, 100-51-6, 520-45-6

Latin Name: Achillea millefolium L.

Synonyms: Yarrow extract, milfoil extract, Herba militaris extract

Chemical Classification: Plant extract

Functional Category: Skin and hair conditioning agent, humectant, emollient

Extraction Method: The extract is obtained by ultrasonic extraction using ultrasound frequencies between 20 and 25 kHz. At these frequencies, ultrasonic waves create microscopic bubbles in the liquid containing the plant material, leading to a phenomenon known as cavitation. Cavitation generates extreme local pressure and temperature conditions in the microenvironment surrounding the imploding bubbles. This phenomenon mechanically disrupts plant cell walls, releasing intracellular active compounds and significantly increasing the extraction rate and efficiency. The process is carried out at 25 °C to preserve the stability of thermolabile constituents such as flavonoids, vitamins, and essential oils. Compared to conventional maceration methods, ultrasonic extraction allows shorter processing times, higher yields, and better utilization of plant raw material. The obtained extract is preserved with a combination of benzyl alcohol (0.86%) and dehydroacetic acid (0.14%), a system approved for use in natural cosmetics and certified by ECOCERT and COSMOS. The extract is water-soluble, enabling easy incorporation into various water-based cosmetic formulations. The pH of the final extract ranges from 4.0 to 6.5, making it suitable for most dermal applications without additional pH adjustment.

Description: The water-glycerin extract of yarrow (*Achillea millefolium*) is a multifunctional plant-derived raw material intended for formulations requiring soothing, regenerative, and anti-inflammatory effects. Due to its flavonoid content, the extract exhibits antioxidant properties and helps neutralize free radicals, while sesquiterpene lactones

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and natural tannins contribute to its astringent and calming effects. This makes it suitable for the care of skin prone to irritation, redness, and inflammatory changes, as well as for formulations aimed at evening out the complexion or reducing skin reactivity. The presence of glycerin further enhances hydration, while the preservative system consisting of benzyl alcohol and dehydroacetic acid ensures microbiological stability. The extract's formulation is compatible with emulsions, gels, toners, and facial masks. Due to its mild nature and good dermal tolerance, it can also be used in products intended for sensitive areas, such as the skin around the eyes. The water-glycerin base provides stability for active components, while the preservatives used do not clog pores and are considered safe within the defined concentrations. This form of yarrow extract is suitable for use in natural and dermocosmetic lines, including products free from harsh surfactants or essential oils, as well as in preparations for skin prone to irritation, acne, or enlarged pores.

Bioactive Compounds: The water-glycerin extract of yarrow contains a rich complex of bioactive compounds with soothing, anti-inflammatory, and antioxidant activity. Key phytochemicals include flavonoids such as apigenin, luteolin, and quercetin, which protect the skin from oxidative stress and reduce irritation. Sesquiterpene lactones (achillin and isoachillin) contribute to anti-inflammatory and antiseptic effects, while phenolic acids (chlorogenic, salicylic) further enhance antioxidant activity. Tannins provide mild astringent properties, help regulate sebum production, and tighten pores, while the presence of polysaccharides and traces of azulene compounds contributes to hydration and the soothing of sensitive skin. This extract is particularly suitable for the care of skin prone to redness, inflammation, and reactivity.

Benefits:

- Soothes irritated and sensitive skin
- Reduces redness and inflammatory changes
- Supports skin regeneration and strengthens the barrier function
- Provides antioxidant protection against oxidative stress
- Exhibits mild antiseptic properties and helps balance the skin microbiota
- Reduces sebum production and tightens pores
- Hydrates the skin and improves elasticity
- Suitable for use in formulations for sensitive areas, such as the skin around the eyes

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Usage: The water-glycerin extract of yarrow is incorporated into the water phase of the formulation, typically at temperatures below 40 °C to preserve the stability of bioactive components. It can be added to toners, gels, serums, emulsions, and creams. The recommended concentration for daily skin care products is between 1% and 10%, depending on the desired intensity of action. In products for sensitive or reactive skin, concentrations are usually in the mid-range (around 5%), while in soothing toners and emulsions they approach the upper limit. The extract is compatible with most plant-based actives and does not require additional stabilizers beyond the standard preservatives already present in its composition.

Animal Testing: Not tested on animals

GMO: Non-GMO

Vegan: Contains no animal-derived components

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