

TECHNICAL DATA SHEET

Product Name: Green Algae Extract – Chlorella

INCI Name: Glycerin, Water, Chlorella Vulgaris Extract, Benzyl Alcohol, Dehydroacetic Acid

CAS Numbers: 56-81-5, 7732-18-5, 223749-83-5, 100-51-6, 520-45-6

Botanical Name: Chlorella vulgaris, Oocystaceae

Chemical Classification: Mixture

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

Extraction Method: The extract is obtained through ultrasonic extraction using frequencies between 20 and 25 kHz. At these frequencies, ultrasonic waves generate microscopic bubbles in the liquid containing the plant material, leading to a phenomenon known as cavitation. Cavitation creates extreme localized pressure and temperature conditions around imploding bubbles. These forces mechanically break down the cell walls of the plant material, releasing intracellular active compounds and significantly enhancing the extraction speed and efficiency. Extraction is conducted at 25°C to preserve thermolabile components. This method is more efficient than traditional extraction techniques due to better raw material utilization and shorter processing time. The extract is preserved with benzyl alcohol (0.86%) and dehydroacetic acid (0.14%), a preservative system accepted in natural cosmetics and compliant with ECO-CERT/COSMOS certification. It is water-soluble, with a pH range of 4 to 6.5.

Description: Chlorella algae extract is a rich source of nourishing and regenerative components that provide beneficial effects on the skin. Its unique composition proteins, vitamins, minerals, and antioxidants supports deep skin nourishment and regeneration. High chlorophyll content contributes to detoxification and reduces oxidative stress, helping protect cellular structures. The presence of essential amino acids further enhances its effectiveness by supporting collagen synthesis, crucial for maintaining skin firmness and elasticity. Its ability to hydrate and repair the epidermis makes it valuable in anti-aging formulations.

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Benefits:

- Enhances skin hydration and strengthens the skin barrier, leaving it smoother and more elastic.
- Polyphenols protect the skin from free radicals and premature aging.
- Reduces redness and inflammation due to anti-inflammatory compounds like phytolane and fucoidan.
- Brightens the complexion, evens skin tone, and reduces dark spots and hyperpigmentation.
- Stimulates collagen and elastin production, improving skin firmness and resilience.
- Aids skin detoxification by removing toxins and excess sebum, improving overall appearance.
- Nourishes the skin with vitamins and minerals, promoting a healthier and fresher look.
- Effectively reduces wrinkles and slows the aging process.

Application: Chlorella Vulgaris Extract is used in various cosmetic products, with concentration tailored to the product's purpose. In moisturizers and lotions, it is typically used at 1-5% to deliver optimal hydration and protection. For serums and tone-correcting products aimed at hyperpigmentation, concentrations up to 3% are common, often in synergy with vitamin C and niacinamide. In anti-aging formulations targeting collagen stimulation and wrinkle reduction, 2-5% is recommended. For sensitive skin products like balms or soothing creams, lower concentrations up to 2% are used to avoid irritation. In intensive treatments such as face masks, concentrations can reach up to 10%. The extract is typically added during the cold-process phase to preserve its bioactive components and ensure efficacy.

Animal Testing: Not tested on animals

GMO: Non-GMO

Vegan: Contains no animal-derived components

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