

TECHNICAL DATA SHEET

Product name: Hyaluronic acid of low molecular weight (8-15 kDa)

INCI name: Sodium Hyaluronate

CAS: 9067-32-7

Synonyms: Acide Hyaluronique, Ácido Hialurónico, Glycoaminoglycan, Glycoaminoglycane, Hyaluran, Hyaluronan, Hyaluronate de Sodium, Hyaluronate Sodium, Hylan, Sodium Hyaluronate.

Chemical classification: Biological polymer/derivative; Carbohydrates

Functional category: Humectant; Skin conditioning agent ~ Other

Country of origin: China

Description: Hyaluronic acid (sodium hyaluronate) is a natural polysaccharide (sugar) present in body tissues, including the skin. Chemically, it is a linear polymer of repeating units of N-acetylglucosamine and glucuronic acid. In its pure form, it is a large molecule with high molecular weight. It plays a crucial role in controlling tissue permeability, cell protection and lubrication, fluid retention, and macromolecular transport between cells. The Low Molecular Weight (LMW) form, with an extremely low molecular weight, is produced by enzymatic degradation of high molecular weight hyaluronic acid into smaller fragments. The molecular weight of this version ranges from 8-15 kDa. LMW is a white, odorless powder, soluble in water. Shelf life is up to 3 years when stored protected from moisture and microbiological contamination.

Benefits:

- **Deep skin hydration:** LMW hyaluronic acid has a small molecular size, allowing it to penetrate deeper into the skin compared to higher molecular weight versions. The moisturizing and "plumping" effects are delivered more effectively to deeper skin layers, making the skin smooth and more elastic.

- **Firms the skin:** LMW hyaluronic acid stimulates the production of collagen and elastin, essential proteins that influence the maintenance of skin firmness and elasticity. By promoting the synthesis of these proteins, LMW hyaluronic acid can help improve skin texture and reduce signs of aging.

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• **Aids in wound healing:** Hyaluronic acid is known for its wound healing properties. LMW hyaluronic acid can assist in the healing process by promoting tissue regeneration and reducing inflammation. It creates an optimal environment for the skin to regenerate itself, beneficial for various skin issues, including acne, scars, and burns.

• **Acts as an antioxidant and anti-inflammatory:** LMW hyaluronic acid exhibits antioxidant properties, helping neutralize harmful free radicals in the skin caused by external factors such as UV rays and pollution. It also has anti-inflammatory effects, soothing irritated skin.

Usage: Typically used in concentrations of 0.1-2%, but higher concentrations are possible as LMW hyaluronic acid does not create a gel-like high molecular weight hyaluronic acid. To avoid clumping, it must be added slowly and stirred rapidly, preferably using a handheld mixer or vortex mixer. Adding a small amount of glycerin is recommended. The powder consistency is less "fluffy," and there is no thickening effect, making it easier to handle higher concentrations.

Application: Ideal ingredient in skincare products after peeling. Commonly used in moisturizing gels, moisturizing creams and lotions, anti-aging and wrinkle serums, pre and post-sun lotions, protective moisturizing products, products for sensitive or dry skin.

Production method: Hyaluronic acid is produced by biotechnological microbial fermentation using yeast extract, peptone, and serum.

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

GMO: Not genetically modified.

Vegan: Does not contain components of animal origin.