

TECHNICAL DATA SHEET

Product name: High Molecular Weight Hyaluronic Acid (800-1500 kDa)

INCI name: Sodium Hyaluronate HMW (800-1500 kDa)

CAS: 9067-32-7

Chemical classification: Biological polymer/derivative; Carbohydrates

Functional category: Humectant, Viscosity modifier ~ Increases viscosity; Skin conditioning agent ~ Other

Description: Hyaluronic Acid (HA) is a natural substance found in the human body, belonging to the glycosaminoglycan family. It is present in various tissues and fluids, such as the skin, joints, and eyes. One of its key properties is its ability to retain water, attracting and holding water molecules to help keep the skin well-hydrated. It can bind a significant amount of water, up to 500 times its weight. HA plays a crucial role in controlling tissue permeability, cell protection and lubrication, fluid retention, and macromolecular transport between cells. HMW stands for "high molecular weight" (800 to 1500 kilodaltons (kDa)). High molecular weight hyaluronic acid influences the increase in the concentration of essential enzymes in the skin and contributes to overall skin health. It actively assists in cellular differentiation during the formation of new epidermal cells, helping the skin defend against aging factors, the negative effects of sunlight, environmental pollution, and the harmful actions of some chemicals. It strengthens and balances defense mechanisms, thereby normalizing the functioning of healthy skin. Formulators can choose different molecular weights of hyaluronic acid based on specific properties they want to achieve in the product. While high molecular weight hyaluronic acid focuses on surface hydration, lower molecular weight molecules can penetrate deeper into the skin for additional benefits. HMW is a white, odorless powder, soluble in water. Shelf life is up to 3 years if stored protected from moisture and microbiological contamination.

Benefits:

- **Skin Hydration:** Hyaluronic acid is a powerful humectant that attracts and retains moisture. When applied to the skin, it can draw water from the environment and deliver it to the skin, providing deep hydration. This helps improve skin elasticity,

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fullness, and hydration levels.

- **Anti-aging:** Hyaluronic acid has the ability to fill in fine lines and wrinkles, making the skin smooth and younger-looking. The higher molecular weight in this range allows it to form a gel-like consistency on the skin, creating a temporary filling effect that reduces the appearance of wrinkles. In deeper layers, it binds to collagen and elastin, restoring skin volume. By binding a large amount of water, the skin becomes firmer, moisturized, looks younger, more beautiful, and more flexible. It is biocompatible, safe, and well-tolerated.

- **Improved Skin Texture:** By enhancing hydration levels, hyaluronic acid can help improve skin texture, making it smooth and even. It can also help reduce rough areas and dry patches on the skin.

Enhanced Skin Barrier Function: Hyaluronic acid can strengthen the natural skin barrier, helping it protect against external aggressors such as pollution and UV radiation. It forms a film on the skin's surface, reducing moisture loss and maintaining optimal hydration.

- **Compatibility with Different Skin Types:** Hyaluronic acid is generally well-tolerated for different skin types, including sensitive and acne-prone skin. Its light and non-greasy texture makes it suitable for a wide range of individuals.

Usage: It is used in a concentration of 0.01-1%. It is not easily soluble in water as it quickly binds water, creating a gel. It should be carefully added to water with constant, rapid stirring (preferably with a hand mixer or using a vortex mixer). The mixture quickly thickens and becomes a gel. At that point, no additional drops of hyaluronic acid can be added, as there is no water for the hyaluronic acid to bind to (additional hyaluronic acid would only form lumps).

Application: Used in cosmetic products for moisturizing and increasing skin elasticity, facial care products, gels, creams, anti-aging products, pre/post-sun lotions, cosmetic products for sensitive or dry skin.

Original materials from which it is derived: Glucose, soy peptone, and yeast extract.

Method of production: Hyaluronic acid is produced through biotechnological microbial fermentation with the help of yeast extract, peptone, and serum.

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

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GMO: Not GMO.

Vegan: Does not contain components of animal origin.



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