Import and distribution for Serbia: Farmadria DOO
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TECHNICAL DATA SHEET

Product Name: Maltitol

INCI name: Maltitol

CAS: 585-88-6

Synonyms: D-maltitol; 4-O-α-D-glucopyranosyl-D-sorbitol; hydrogenated maltose sugar alcohol; sugar alcohol derived from maltose

Chemical classification: Polyol (sugar alcohol); disaccharide polyol obtained by hydrogenation of maltose

Functional category: Humectant; sweetener; texture modifier; plasticizer; emollient; stabilizer

IUPAC name: (2R,3R,4R,5S,6R)-2-[[(2R,3R,4R,5R,6S)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy]hexane-1,2,3,4,5,6-hexol

Description: Maltitol is a polyol (sugar alcohol) obtained by hydrogenation of maltose. In cosmetic formulations, it is primarily used as a humectant and texture regulator. Its main function is based on its ability to bind water, contributing to maintaining skin hydration and improving the sensory profile of the product. In formulations, it provides a slight increase in viscosity and contributes to system stability without significantly affecting pH. It forms a light, non-occlusive film on the skin surface, improving smoothness and uniformity. Due to its chemical stability and low reactivity, it is compatible with a wide range of cosmetic ingredients. It is most commonly used in emulsions, gels, lip care products, and oral care formulations, where it is also valued for its pleasant taste and low cariogenicity. Overall, maltitol represents a stable and functional auxiliary ingredient that contributes to hydration, texture, and overall formulation performance.

Physicochemical properties: Maltitol appears as a white to almost white crystalline substance, odorless and with a mildly sweet taste. It is highly soluble in water, slightly soluble in alcohol, and practically insoluble in non-polar solvents. Aqueous solutions are stable and exhibit slightly viscous behavior depending on concentration. The substance is chemically stable over a wide pH range and does not show significant reactivity in cosmetic formulations.

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It is hygroscopic, with the ability to bind moisture from the environment, which contributes to its humectant function. The melting point is approximately 148–152 °C, with prior softening and possible partial decomposition at higher temperatures.

Benefits:

- Provides skin hydration by binding and retaining water in the upper layers.
- Improves formulation texture, making it more uniform and smooth.
- Enhances system stability by reducing phase separation in emulsions and gels.
- Forms a light film that improves skin softness without a greasy residue.
- Reduces product drying due to its hygroscopic properties.
- Improves sensory characteristics, giving a pleasant, non-sticky feel.
- Supports better distribution of active ingredients in the formulation.
- Provides a pleasant taste in lip care and oral care products.

Method of use: Maltitol is used in cosmetic formulations as a humectant and texture regulator, typically in the water phase or directly added to finished systems where hydration and sensory adjustment are required. It is easily soluble in water and incorporated with mixing, without the need for heating, although mild heating can accelerate dissolution at higher concentrations. In emulsions (creams and lotions), it is used at concentrations of approximately 1–5%, contributing to hydration and improved texture. In gels and serums, it is used in the range of 1–10%, depending on the desired level of hydration and viscosity. In lip care and oral care products, it is used at higher concentrations, typically 5–20%, due to its humectant properties and pleasant taste. In decorative cosmetics, it is used at 1–5%, where it improves distribution and formulation stability. At higher concentrations, it may increase stickiness, so balancing with other humectants and emollients is recommended. It is stable over a wide pH range and compatible with most cosmetic ingredients.

Natural or synthetic origin: Maltitol is an ingredient of natural origin, obtained through chemical transformation (hydrogenation) of maltose derived from plant starch. It belongs to the category of naturally derived ingredients obtained through processing.

Animal testing: In accordance with current European regulation (Regulation (EC) No. 1223/2009 on cosmetic products), the substance has not been tested on animals.

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The safety assessment is based on available toxicological data, scientific literature, and validated alternative methods (in vitro and in silico). “In silico” refers to testing 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 is provided for informational purposes for further use of the raw material in cosmetic formulations.

GMO: Not GMO

Vegan: Does not contain components of animal origin