

TECHNICAL DATA SHEET

Product Name: Microcrystalline Wax

INCI Name: Microcrystalline wax

CAS: 63231-60-7

Chemical Classification: Wax

Functional Category: Viscosity Modifier, Emulsion Stabilizer

Description: Microcrystalline waxes are produced by removing oil from petroleum during the refining process. Unlike the more well-known paraffin wax, which mainly contains unbranched alkanes, microcrystalline wax contains a higher percentage of isoparaffinic (branched) and naphthenic hydrocarbons. The fineness of its crystals differentiates it from the larger crystals of paraffin wax, giving it unique physical properties. The chemical structure of microcrystalline wax is characterized by branched aliphatic chains and cyclic structures (naphthenic hydrocarbons), which create an irregular molecular arrangement. This irregular arrangement contributes to the elasticity of microcrystalline wax. Although these molecules do not have specific functional groups like hydroxyl or carboxyl groups that would significantly affect chemical reactions, the structure of microcrystalline wax provides unique physical properties useful in various applications. Microcrystalline waxes are typically darker than paraffin waxes, ranging from brown to white depending on the degree of refining. They are more viscous than paraffin waxes, making them suitable for applications where a dense consistency is needed. They are denser than paraffin waxes, which contributes to their ability to create protective barriers. The stickiness and elasticity of microcrystalline wax are due to the presence of branched and cyclic hydrocarbons, which allow the wax to be elastic. Microcrystalline wax has a higher molecular weight than paraffin waxes, contributing to its stability and durability. A higher melting point compared to paraffin waxes allows it to be used in applications requiring resistance to higher temperatures. Melting point: 79.4-86.7 °C. It is insoluble in water and polar solvents, but soluble in oils and other melted waxes. Microcrystalline waxes are used in many industries, including cosmetics, pharmaceuticals, food, and candle making. In cosmetics, they are used to form protective layers on the skin and retain moisture, while in pharmaceuticals they help control the release of active ingredients in tablets and ointments. They are also used in the food industry as coating and preservation agents and in candle making for providing

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smooth, consistent, and long-lasting burning.

Benefits:

- **Emollient:** Microcrystalline wax acts as an emollient, creating a protective barrier on the skin's surface, helping to retain moisture and prevent water loss. It keeps the skin hydrated, soft, and elastic.

- **Texture and Stability:** Microcrystalline wax provides stability and structure to various cosmetic products such as creams, lotions, and lip balms. It helps these products have a smooth and creamy texture, making application and even spreading on the skin easier.

- **Binding Agent:** In cosmetic formulations, microcrystalline wax functions as a binding agent, helping to keep ingredients together and maintain product consistency. In emulsions, microcrystalline wax prevents the separation of oil- and water-based ingredients.

- **Film-forming Effect:** Microcrystalline wax forms a thin, flexible film on the skin, which can improve the durability of makeup products such as lipsticks and foundations, providing better adhesion and longevity.

- **Thickening Agent:** Thanks to its viscosity, microcrystalline wax is used as a thickening agent in various cosmetic products, contributing to the desired texture and consistency.

- **Shine:** In lip balms, lip glosses, and hair products, microcrystalline wax gives shine to lips and hair, enhancing the overall appearance.

- **Formulation Stability:** Microcrystalline wax has excellent stability in various formulations, extending the shelf life of cosmetic products.

- **Compatibility:** It is compatible with various cosmetic ingredients, making it suitable for use in different formulations and products.

- **Non-comedogenic:** Generally non-comedogenic, meaning it does not clog pores, making it suitable for use in cosmetic products intended for sensitive skin and people prone to acne.

- **Easy Removal:** Microcrystalline wax is easily removed from the skin with regular cleansing, ensuring makeup removal without leaving greasy residues.

Usage: Added to the heated oil phase of formulas. Typical usage level is 1 - 30% depending on the product and desired viscosity. For external use only.

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Applications: Added to moisturizing creams and lotions to improve texture, provide hydration, and create a protective layer on the skin. Used in lip balms to hydrate and protect lips, keeping them soft and preventing dryness. In products such as lipsticks and glosses, microcrystalline wax helps achieve longevity and better color retention. In some foundation and powder formulations, it can help create a smooth and matte finish on the skin. Added to shampoos, conditioners, and hair masks to enhance softness and shine. Used in formulations to strengthen and hydrate nails, reducing breakage and splitting. In some depilatory waxes, microcrystalline wax helps create a flexible film that is easily removed from the skin. In hair styling products such as waxes and gels, microcrystalline wax helps shape and fix hairstyles. Used in aftershave products to soothe and hydrate the skin and prevent irritation. It is also used in candle making due to its high melting point and compatibility with fragrances and colors. Its versatility, compatibility with other ingredients, and diverse properties make it a popular and widely used ingredient in many cosmetic formulations.

Source: Petroleum

Production Method: Microcrystalline wax is obtained by deoiling petrolatum during the petroleum refining process.

Animal Testing: The substance is not tested on animals.

GMO: Non-GMO

Vegan: Does not contain animal-derived components

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