

TECHNICAL DATA SHEET

Product Name: Paraffin Wax

INCI Name: Paraffin Wax

CAS: 8002-74-2

Synonyms: Hard Paraffin; Hard wax; paraffinum durum; paraffinum solidum; paraffin wax

Chemical Classification: Hydrocarbon, Wax

Functional Category: Skin Conditioning Agent ~ Occlusive; Viscosity Modifier ~ Viscosity Increasing, Candle Making Agent

IUPAC Name: The hydrocarbon C₃₁H₆₄, typical component of paraffin wax.

Description: Paraffin is a white, waxy substance, practically odorless and tasteless, making it ideal for use in products where odor and taste neutrality are required. Its texture is smooth and waxy to the touch, allowing easy application and even distribution on surfaces. Its physical structure is crystalline and can be present in the form of solid blocks, granules, or powder, depending on the processing method and end-use. The melting point varies between 46°C and 68°C, giving it stability over a wide temperature range and making it suitable for various industrial processes. One of the key physical properties of paraffin wax is its ability to form a hydrophobic barrier. When applied to the skin, it forms a thin film that effectively retains moisture, preventing dehydration. This property makes it extremely useful in moisturizing creams and lotions. Paraffin wax has good compatibility with various fragrances and essential oils, which is crucial for producing scented candles and aromatherapy products. Its ability to melt easily and form stable mixtures makes it suitable for various applications, including cosmetics, pharmaceuticals, and candle making. In liquid form, it is also known as paraffin oil. In liquid form, paraffin has low viscosity, is insoluble in water, but dissolves in organic, nonpolar solvents.

Benefits:

- **Hydration and Barrier Protection:** Paraffin wax creates a protective layer on the

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skin's surface, preventing moisture loss. This occlusive effect helps retain the skin's natural hydration, making it smooth and soft. Therefore, it is often used in moisturizing creams and lotions, where it helps restore dry and cracked skin.

- **Skin Softening:** When used in lip balms and hand creams, paraffin wax helps soften the skin and lips. Its ability to retain moisture makes it ideal for products aimed at addressing dry and rough skin. It does not clog skin pores (paraffin, due to its molecular size, does not penetrate the skin).

- **Improvement of Product Texture and Consistency:** Paraffin wax contributes to the stability and consistency of cosmetic products. In formulations of lip balms, creams, and lotions, the wax helps create a firm yet smooth texture that is easy to apply. Products containing paraffin spread easily and do not leave a greasy residue.

- **Thermotherapy Effects:** Paraffin wax is known for its thermotherapy properties, meaning it is used in treatments involving the melting of wax and its application to the skin. These treatments are popular in beauty salons for hand and foot treatments. Warm paraffin wax is applied to the skin, where it helps open pores, improve circulation, and enhance the penetration of moisturizing ingredients. After hardening, the wax is easily removed, leaving the skin deeply hydrated and soft.

- **Reduction of Fine Lines and Wrinkles:** Regular use of products containing paraffin wax can help reduce the appearance of fine lines and wrinkles. The occlusive properties of the wax retain moisture and maintain skin elasticity, which can help reduce signs of aging. This benefit is particularly useful for anti-aging cream and serum formulations.

- **Versatility in Formulations:** Paraffin wax is compatible with many cosmetic ingredients. It can be easily combined with oils, butters, emulsifiers, and other waxes to achieve different effects and textures in cosmetic products. Its versatility allows formulators to create a wide range of products that meet various consumer needs.

Usage: In creams and lotions, it is used to create a barrier on the skin that prevents moisture loss. This protective barrier is especially useful for dry and damaged skin, as it helps preserve natural hydration. Typically, in creams, it is used in concentrations ranging from 1% to 10%, depending on the desired consistency and specific functions of the product. In lip balms, paraffin wax provides firmness and stability, helping the product not to melt at room temperature while ensuring smooth and even application. Concentrations here can range from 10% to 20%, allowing the balm to remain solid yet soft enough for easy application. In hair care products, paraffin wax is used as an ingredient for styling and shine. It helps tame unruly hair and adds a protective layer that shields

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against external influences. In such products, concentrations are usually lower, between 1% and 5%, to avoid weighing down the hair and achieving the desired effect. In candle making and massage products, paraffin wax is used in higher concentrations, often close to pure form, as it is important for the product to retain its shape and slowly melt under the influence of heat, providing a long-lasting effect. All these applications rely on the key properties of paraffin wax – its ability to form a protective layer, stability at various temperatures, and inertness that guarantees product longevity. These characteristics allow paraffin wax to be used in a wide range of cosmetic formulations, from skin and hair care to specialized massage and relaxation products.

Obtaining: It is obtained from certain fractions of vacuum distillation residues after the distillation of petroleum above 400°C from bituminous shales and coal tar. Gradual cooling of these fractions to approximately -40°C precipitates paraffin wax, which is then separated by filtration. From paraffin wax, three types of paraffin are obtained: hard paraffin, ceresin, and petroleum jelly.

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

GMO: It is not GMO.

Vegan: It does not contain components of animal origin.