

TECHNICAL DATA SHEET

Product Name: Rice Bran Wax

INCI Name: Oryza Sativa Cera

CAS: 8016-60-2

Synonyms: Rice Husk Wax, Rice Wax, Rice Bran Oil Wax, Oryza Sativa Bran Wax

Chemical Classification: Wax

Functional Category: Cosmetic Ingredient - emollient in lip balms, lotions, and creams

Chemical-Physical Properties: Rice bran wax has a complex chemical composition. It contains fatty acid esters with 16-24 carbons, formed by the reaction of fatty acids with alcohols. Primary esters include palmitate and stearate, contributing to the wax's solid structure. It also contains higher alcohols, primarily with 26-32 carbons, such as cetyl alcohol (C26) and melissyl alcohol (C30), which enhance its high melting point and hardness. Rice bran wax also includes ferulic acid esters, known for their antioxidant properties, providing additional benefits in cosmetic formulations. Minor components include free fatty acids, hydrocarbons, sterols, and other lipids, contributing to its physical properties and stability. Rice bran wax is insoluble in water but dissolves in oils and organic solvents, making it suitable for cosmetics and pharmaceuticals as a stabilizer and thickening agent. When heated and used in formulations, it provides a smooth, creamy texture, offering products a soft, non-greasy feel on the skin.

Description: Rice bran wax is obtained from rice bran, a by-product of rice processing. Rice is harvested from fields and cleaned to remove impurities like stones, dust, and organic materials. Cleaned rice undergoes hulling to remove the outer husk of the grain. The remaining brown rice is then milled. Oil extraction is performed using mechanical pressing, followed by cooling to separate solid wax fractions, which are then filtered. The obtained wax undergoes refining processes to remove impurities and achieve a high-quality product, including decolorization, deodorization, and additional filtration. The refined wax is molded and packaged for various applications, including cosmetics, pharmaceuticals, and industrial uses. Rice bran wax thus obtained has a light yellow to light brown color and a pleasant odor, with a high melting point ranging from 77°C to 86°C.

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Benefits:

- **Emollient Properties:** Rice bran wax acts as an excellent emollient, forming a thin protective layer on the skin's surface. This layer helps retain moisture within the skin, preventing water evaporation from the epidermis. This effect is particularly beneficial for individuals with dry or dehydrated skin, maintaining skin hydration effectively.

- **Stability and Consistency:** Improves stability and consistency in cosmetic formulations, thickening products and providing them with a smooth, creamy texture desirable in lotions, creams, and lip balms.

- **Anti-inflammatory Action:** Biologically active components like antioxidants and phytosterols act at the cellular level. Antioxidants neutralize free radicals, often responsible for oxidative stress and inflammatory processes in the skin. Phytosterols reduce the production of inflammatory mediators, substances produced by the body in response to injuries or irritations. Rice bran wax also helps in repairing damaged skin barriers, reducing skin susceptibility to inflammation, and enhancing its ability to defend against irritations.

- **Non-comedogenic:** Forms a lightweight, breathable layer on the skin's surface upon application, acting as a protective barrier that retains moisture within the skin without clogging pores. This characteristic is due to its chemical structure and molecular weight, allowing the skin to breathe unlike heavier waxes or oils that can potentially block pores.

- **Natural Source:** As a natural wax derived from rice bran oil, it is an attractive ingredient for consumers seeking natural and sustainable cosmetic options.

- **Enhanced Product Effectiveness:** Enhances the effectiveness and longevity of cosmetic products by providing a stable, non-greasy finishing layer and improving texture and spreadability.

- **Rich in Nutrients:** Rice bran wax is rich in nutrients that benefit the skin, including hydration, protection, and regeneration. It contains vitamin E, essential fatty acids (oleic and linoleic acid), phytosterols, squalene, tocotrienols, and natural waxes, which synergistically improve overall skin health and appearance.

- **Versatility:** Can be used in a wide range of cosmetic formulations, including lipsticks, lip balms, mascaras, lotions, creams, and hair care products.

Usage: Rice bran wax is used as a thickener and emulsifier in creams and lotions, aiding in the formation of a stable emulsion with a creamy texture. Recommended concentra-

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tions vary depending on the type of formulation: 1-5% in creams and lotions, 10-20% in lip balms, 5-10% in ointments and pomades, and 2-8% in oil phases of emulsions and oleogels.

Animal Testing: Substance has not been tested on animals.

GMO: Not genetically modified.

Vegan: Does not contain animal-derived components.

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