

TECHNICAL DATA SHEET

Product Name: PEG-40 Hydrogenated Castor Oil

INCI Name: PEG-40 Hydrogenated Castor Oil

CAS: 61788-85-0

Chemical Classification: Alcohol ~ Alkoxylated Alcohol

Functional Category: Solubilizer, Surfactant ~ Emulsifier

Description: PEG-40 Hydrogenated Castor Oil is a synthetic ingredient used in cosmetic and toiletry products as an emulsifier, solubilizer, and moisturizing agent. It is a derivative of castor oil, which is a natural plant oil, and it undergoes hydrogenation, meaning hydrogen atoms are added to stabilize its structure. The addition of polyethylene glycol (PEG) allows this oil to become water-soluble, which is useful in products where mixing oil and water is necessary, such as lotions, creams, serums, and facial cleansers. PEG-40 Hydrogenated Castor Oil acts as a surfactant. It helps remove dirt, oil, and makeup from the surface of the skin. Thanks to its emulsifying ability, it enables better blending of different ingredients, contributing to formula stability. In shampoos and shower gels, it is used as a solubilizer for essential oils and other non-polar ingredients, ensuring they are evenly distributed in water. Additionally, this ingredient has moisturizing properties, as it helps retain moisture in the skin, making it softer and more elastic. Due to its mild nature, it is suitable for various skin types, including sensitive skin. HLB value 15 (produces oil-in-water emulsions). pH 6–8 (3% in water).

Benefits:

- Enables the mixing of oil and water-based ingredients in cosmetic products.
- Acts as a solubilizer, allowing oil-soluble substances to dissolve in water-based formulations.
- Functions as a surfactant, reducing surface tension, which helps remove dirt and grease from skin and hair.
- Has moisturizing properties, retains moisture in the skin, making it soft and elastic.
- Improves product texture, making them pleasant to the touch and easier to apply.

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- Stabilizes formulations, preventing separation of ingredients during storage and use.

Usage: PEG-40 Hydrogenated Castor Oil is used in various cosmetic products such as creams, lotions, serums, shampoos, and facial cleansers. It is mainly used as an emulsifier, solubilizer, and surfactant, allowing the mixing of oil and water. This ingredient is also used to dissolve essential oils and other non-polar substances in water-based formulas, especially in products like micellar waters and shower gels. Recommended concentrations of PEG-40 Hydrogenated Castor Oil vary depending on the product. In creams and lotions, where it is used to stabilize emulsions and improve texture, concentrations typically range between 1% and 5%. In facial cleansing products, such as micellar waters or gels, it may be used in concentrations of 0.5% to 2%, where it acts as a solubilizer and surfactant, helping remove dirt and makeup. When used in shampoos and hair conditioners, concentrations range from 1% to 3%, as it helps with foaming, emulsifying, and solubilizing ingredients, ensuring even product distribution. This ingredient is usually added during the mixing phase at low temperatures to avoid degradation or destabilization. If the formulation appears cloudy, adding PEG-40 Hydrogenated Castor Oil can increase transparency. For external use only.

Natural or Synthetic Ingredient: PEG-40 Hydrogenated Castor Oil is a semi-synthetic cosmetic ingredient. It is obtained by chemical modification of natural castor oil, which is first hydrogenated and then ethoxylated with the addition of 40 units of ethylene oxide. This combination of natural and synthetic components results in an ingredient used as an emulsifier, solubilizer, and emollient in cosmetic products.

Animal Testing: Not tested on animals

GMO: Non-GMO

Vegan: Contains no animal-derived components

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