Import and distribution for Serbia: Farmadria DOO
info@avenalab.com
+381 (0) 69 / 55 65 029
www.avenalab.com

TECHNICAL DATA SHEET

Product Name: Cetyl Alcohol

INCI Name: Cetyl Alcohol

CAS: 36653-82-4

Chemical Classification: Fatty Alcohol

Functional Category: Surfactant & Co-emulsifier, Viscosity Modifier (Thickener), Emulsion Stabilizer, Foam Enhancer, Pearlizing Agent - Agent for Giving a Shimmering or Pearlescent Effect

IUPAC Name: Hexadecan-1-ol

Chemical-Physical Properties: Cetyl alcohol is a saturated fatty alcohol with the chemical formula C16H34O. Its molecule consists of a long chain with 16 carbon atoms. The hydrocarbon chain is nonpolar (hydrophobic) and does not dissolve in water. The hydroxyl group (-OH) at the end of the chain is polar, giving cetyl alcohol some hydrophilic properties. When cetyl alcohol is added to an oil and water mixture, the cetyl alcohol molecules orient themselves so that the hydrophilic head (hydroxyl group) faces the water, while the hydrophobic tail (hydrocarbon chain) orients towards the oil. This orientation allows cetyl alcohol to reduce the surface tension between oil and water, facilitating the formation of small oil droplets that are evenly distributed throughout the aqueous phase. In this way, cetyl alcohol helps in the formation and stabilization of emulsions, preventing oil and water from separating again. Cetyl alcohol appears in the form of white flakes or pearls and has a very mild odor. Its solubility varies: it is easily soluble in diethyl ether and acetone, while it is poorly soluble in alcohol. It is practically insoluble in cold water but partially dissolves in warm water. The melting point of cetyl alcohol is between 49 and 55°C, and its density is approximately 0.81 g/cm³ at 20°C. The HLB value is 15.5. These physical properties make cetyl alcohol suitable for wide application in the cosmetic and pharmaceutical industries, where it is used as an emollient, co-emulsifier, viscosity regulator, and opacifying agent.

Applications: Cetyl alcohol is used in cosmetics as an emulsifier for stabilizing emulsions, an emollient for hydration, and a thickener for increasing viscosity. In creams and lotions, it helps form stable emulsions and improves texture. In shampoos and hair

Avena Lab
Farmadria d.o.o. Since 1991.

Import and distribution for Serbia: Farmadria DOO
info@avenalab.com
+381 (0) 69 / 55 65 029
www.avenalab.com

TECHNICAL DATA SHEET

conditioners, it improves viscosity and adds moisturizing properties. It is also used in lip balms and sticks to achieve desired firmness and texture.

Benefits:

- ***Emollient Properties:*** Acts as an emollient. It helps in moisturizing and softening the skin. It forms a protective barrier on the skin's surface, preventing moisture loss and keeping the skin hydrated. This makes it particularly useful in creams, lotions, and moisturizing products.
- ***Texture and Consistency:*** Acts as a viscosity enhancer, giving cosmetic products a smooth and creamy texture.
- ***Stability:*** Acts as a stabilizer in emulsions, such as creams and lotions. It helps maintain the mixtures of oil and water in the formulation, preventing their separation. This improves consistency and extends the product's shelf life.
- ***Improves Product Performance:*** Thanks to its thickening properties, cetyl alcohol can enhance the performance of various cosmetic formulations. It allows better control of the product during application and helps other active ingredients penetrate the skin more effectively.
- ***Non-Irritating:*** Generally well tolerated. Suitable for use in products intended for sensitive skin.
- ***Compatibility:*** Compatible with a wide range of other cosmetic ingredients, including emulsifiers, surfactants, and preservatives. This makes it a versatile ingredient that can be easily incorporated into various formulations.

Usage Instructions: Recommended concentrations of cetyl alcohol vary depending on the product type. In creams and lotions, it is typically used in concentrations of 0.5% to 5%, contributing to the formation of stable emulsions and improving product texture. In shampoos and hair conditioners, it is used in similar concentrations to improve viscosity and add moisturizing properties. In lip balms and sticks, the concentration can be up to 10% to achieve desired firmness and texture. In pharmaceutical preparations, such as topical creams and ointments, cetyl alcohol is used in concentrations of 2% to 10%, depending on the specific needs of the formula. When adding cetyl alcohol to formulations, it is usually heated along with other oils and waxes until completely melted, and then gradually added to the aqueous phase while mixing to form a stable emulsion. This careful procedure ensures optimal product performance, providing stability, appropriate texture, and hydration.

Avena Lab
Farmadria d.o.o. Since 1991.

Import and distribution for Serbia: Farmadria DOO
info@avenalab.com
+381 (0) 69 / 55 65 029
www.avenalab.com

TECHNICAL DATA SHEET

(CIR) Expert Panel for Cosmetic Ingredient Safety: The CIR Panel (Cosmetic Ingredient Review Panel) is an expert panel of a non-profit organization established in 1976 to assess the safety of cosmetic ingredients used in personal care products. The CIR Panel consists of experts in toxicology, dermatology, pharmacology, and other relevant scientific disciplines. The panel independently reviews and evaluates scientific data on ingredients to determine if they are safe for use in cosmetics. The results and recommendations of the CIR Panel are published in the CIR Annual Scientific Review, which is available to the public and the industry and serves as a guide for cosmetic manufacturers regarding the safety of the ingredients they use in their products. The Cosmetic Ingredient Review (CIR) Expert Panel has assessed the safety of cetyl alcohol and other similar fatty alcohols and concluded that these ingredients are safe for use in cosmetic products. This opinion was reaffirmed in 2005 after a review of new available data. Toxicological data for cetyl alcohol, cetearyl alcohol, isostearyl alcohol, myristyl alcohol, and behenyl alcohol have shown that these compounds are not toxic. Clinical studies have shown that cetyl alcohol is not mutagenic, and formulations containing these fatty alcohols are not skin irritants or sensitizers. The CIR panel stated that the similar chemical structure of these ingredients allows for data extrapolation from one alcohol to others, concluding that they have equivalent biological activity.

Raw Material Source: Obtained by catalytic hydrogenation of triglycerides derived from vegetable oils, followed by oxidation of the product and chain elongation of ethylene oligomerized on a triethylaluminum catalyst.

Animal Testing: The substance has not been tested on animals

Source Country: Italy

GMO: Not GMO

Vegan: Does not contain animal-derived components