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TECHNICAL DATA SHEET

Product Name: Dimethicone 350

INCI Name: Dimethicone

CAS: 63148-62-9

Synonyms: Siloxanes and Silicones, di-Me; Polon MF 32; Polydimethylsiloxanes; Polysiloxanes, di-Me siloxane; Polysiloxanes

Chemical Classification: Siloxane

Functional Category: Emollient, Skin Conditioning Agent ~ Occlusive, Solvent

Raw Material Origin: EU

IUPAC Name: Polydimethylsiloxane

Description: Dimethicone 350 is a polydimethylsiloxane, a synthetic polymer consisting of repeating dimethylsiloxane units. The structure of this polymer includes silicon (Si) bonded to oxygen (O) and methyl groups (CH_3). The chemical stability of dimethicone is based on the presence of strong Si-O bonds, which make it resistant to oxidation and degradation. It has a high molecular weight, and its viscosity is similar to that of vegetable oils (350 cps, mPa.s). It is odorless, insoluble in water, but soluble in alcohol. It is dispersible in oils and fats. Dimethicone 350 has good thermal stability, maintaining its properties over a wide temperature range. It is chemically inert and resistant to oxidation, making it stable in various formulations. Its boiling point is above 200°C, indicating high thermal resistance, and its flash point is around 310°C, indicating it is not easily flammable. The refractive index is 1.402 at 25°C.

Effects on Skin: Silicones (organo-silicone polymers) are perfect substitutes for hydrocarbons. They reduce the feeling of stickiness on the skin; they are permeable; they have an anti-adhesive effect; they are easy to apply and spread; they can increase SPF (Sun Protection Factor) in cosmetic products for sun protection; they improve wet and dry combing of hair, giving it softness and shine. They make colors more dispersible (act as a solvent).

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Benefits:

• ***Hydration and Protection:*** Creates a protective layer on the skin surface that helps retain moisture, preventing skin from drying out. It also protects the skin from external irritants.
• ***Improves Product Texture:*** Dimethicone 350 helps improve the texture of cosmetic products, making them smooth and easy to apply. It provides a silky feel on the skin.
• ***Reduces Stickiness:*** Due to its properties, dimethicone reduces the sticky and greasy feel some ingredients can leave on the skin.
• ***Soothes Irritation:*** Dimethicone is known for its soothing properties and is often used in skin care products to reduce irritation and redness.
• ***Increases Makeup Longevity:*** In makeup products, dimethicone helps achieve long-lasting results, reducing smudging and allowing for even application.
• ***Non-Comedogenic:*** Dimethicone does not clog pores, making it suitable for all skin types, including acne-prone skin.
• ***Improves Hair Appearance:*** In hair care products, dimethicone 350 helps reduce static electricity, makes hair smooth and shiny, facilitates combing, and reduces split ends.
• ***Formulation Stability:*** Due to its chemical inertness, dimethicone helps stabilize formulations, making them more resistant to degradation and extending the product's shelf life.

Usage Instructions: Dimethicone 350 is commonly used in concentrations from 0.5% to 5%. It can also be used in higher concentrations. Dimethicone 350 is mixed with the oil phase or added at the end of production. For external use only.

Applications: Silicones are used in hair care products such as shampoos and conditioners. They find applications in skin care and sun protection cosmetics. They are often present in decorative cosmetics. They are used for dissolving and suspending (UV filters, pigments, etc.).

Source Raw Materials: Dimethyldichlorosilane and water

Production Method: Dimethicone is produced from dimethyldichlorosilane, which is

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obtained from powdered silicon (silicon dioxide) and methyl chloride. Dimethyldichlorosilane is then hydrolyzed to obtain a mixture of polysiloxane hydrolysates. In the polymerization reaction with water, polysiloxanes polymerize into a linear silicone polymer (dimethicone).

Animal Testing: Substance not tested on animals

GMO: Not GMO

Vegan: Does not contain animal-derived components