

TECHNICAL DATA SHEET

Product Name: EmuMaker® Cetyl Dimeticone 10

INCI name: Cetyl PEG/PPG-10/1 Dimethicone

CAS: 142321-71-9

Chemical classification: Siloxane and silane; classified as a modified siloxane with a PEG/PPG chain. Manufacturers list it under silicones siloxanes & silanes.

Functional category: Surface-active agent – amphiphilic silicone emulsifier with strong surfactant properties.

Description: EmuMaker® Cetyl Dimeticone 10 (Cetyl PEG/PPG-10/1 Dimethicone) is an amphiphilic silicone emulsifier that stabilizes oil–water blends thanks to the combination of its silicone backbone and ethoxylated–propoxylated segments. This molecular structure enables the formation of stable, fine, and aesthetically appealing emulsions, particularly in lightweight creams, lotions, serums, and tinted formulations. In the formulation, it acts as an emollient and sensory modifier, softening the skin and leaving a smooth, non-greasy, velvety texture, while simultaneously ensuring system stability by reducing the interfacial tension between the phases. Owing to the cetyl segment, it demonstrates stronger affinity for the skin’s lipid layer, enhancing spreadability and uniformity of the final texture. This ingredient is especially valued in products aiming for an elegant “silky feel” effect without a heavy occlusive film, which is why it is widely used in makeup bases, BB/CC creams and pigmented creams. In moisturizing and anti-age products, it promotes stable dispersion of lipophilic active substances, and in formulations for sensitive regions, such as the area around the eyes, it provides a pleasant, fast-absorbing texture. Typical usage levels are low enough not to compromise system stability, yet sufficient to ensure the desired sensory profile and reliable emulsion stability. The material is of synthetic origin and demonstrates good dermal tolerance. It does not clog pores and does not cause irritation at concentrations commonly used in dermocosmetic and decorative formulations.

Mechanism of action: The mechanism of action of EmuMaker® Cetyl Dimeticone 10 is based on its specific amphiphilic molecular architecture, in which the silicone chain – with a marked affinity for the lipophilic phase – is balanced by PEG/PPG segments that naturally gravitate toward the aqueous environment. This distribution of hydrophilic

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and lipophilic sections enables the molecule to spontaneously position itself at the interphase boundary, where it forms a stable emulsion film and reduces the surface tension between oil and water. The silicone component coats the oil droplets, creating a smooth, elastic, and stable shell, while the hydrophilic segments prevent their coalescence, resulting in homogeneous and long-term stable emulsions even at lower emulsifier levels. The cetyl portion enhances interaction with the skin's lipid layer, improving spreadability and the even distribution of the product during application. Simultaneously, the silicone phase ensures stable dispersion of lipophilic active substances within the formulation, thereby facilitating more effective delivery of actives into the skin's superficial layers. The result is a thin, non-greasy and pleasant film that imparts the characteristic "silky feel," accelerates absorption and does not create a sense of heaviness or occlusion. Due to this mode of action, the emulsifier demonstrates exceptional performance in lightweight emulsions and serums, as well as in products intended for sensitive regions, such as the area around the eyes, where a stable, light and well-tolerated texture is required.

Benefits:

- Reduces surface and interfacial tension, facilitating and accelerating the emulsification process.
- Provides a smooth, velvety texture due to the silicone component.
- Enhances spreadability and uniform distribution across the skin.
- Ensures stable dispersion of lipophilic active ingredients.
- Forms a lightweight, non-greasy, non-occlusive and pleasant film on the skin.

Method of use: The ingredient is incorporated during the cold-process phase without heating, as it readily disperses either into the water phase or directly into the oil phase of the formulation. Optimal results are achieved when added at the moment of emulsion film formation, after which mixing leads to spontaneous system stabilization. In light gel-creams and serums, it is used at lower concentrations, since small amounts are sufficient to stabilize fine oil droplets and ensure a smooth, non-greasy texture. In conventional O/W emulsions, higher concentrations are used to obtain a stable and visually uniform structure. In formulations intended for sensitive regions, such as the eye area, it is used in lower dosages to achieve a light, fast-absorbing sensory profile without a feeling of tightness or heaviness. In practice, concentrations of 1–3% are sufficient for gel-serums and ultra-light emulsions, while 3–6% is used in standard

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creams and milk emulsions, depending on the oil-phase content and desired viscosity. In formulations with higher proportions of silicone or ester oils, slightly higher levels may be applied, remaining within standard technological practice and ensuring a stable, homogeneous system with a pleasant sensory effect.

Natural or synthetic origin: Cetyl PEG/PPG-10/1 Dimethicone is a synthetic ingredient. It is produced via chemical modification of silicone oil by linking PEG/PPG chains and a cetyl segment, and therefore does not originate from natural sources and is not considered natural nor nature-identical.

Animal testing: In accordance with current European regulation (Regulation (EC) No. 1223/2009 on cosmetic products), the substance has not been tested on animals. Safety assessment of the ingredient is based on available toxicological data, scientific literature, and validated alternative testing methods (in vitro and in silico). In silico refers to testing and assessment methods performed using computer models and simulations rather than on live organisms (in vivo) or cell cultures (in vitro). This note confirms compliance with the ban on animal testing and is included solely for informational purposes as part of further cosmetic formulation use.

GMO: Not GMO.

Vegan: Contains no animal-derived components.