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

TECHNICAL DATA SHEET

Product Name: Polysiloxane

INCI name: Polymethylsilsesquioxane

CAS: 68554-70-1

Chemical classification: Organo-silicon polymer (silsesquioxane)

Functional category: Emollient, film former, mattifying agent, surface modifier

IUPAC name: There is no single full IUPAC name due to its polymeric nature; the generic name Polymethylsilsesquioxane is used.

Description: Polysiloxane is a synthetic silicone polymer belonging to a special group of silsesquioxanes, whose structure resembles a network of small, spherical particles. It is obtained through the chemical polymerization of methyltriethoxysilane, resulting in a stable, solid yet lightweight material with a characteristic spherical morphology. In cosmetics, it is used due to its unique combination of physical and sensory properties: it creates a pleasant, velvety and powdery feel on the skin, provides smooth glide during application, and contributes to light diffusion, making the skin appear more even and matte. Due to its porous structure, it has the ability to absorb excess sebum, contributing to a matte finish and improved makeup longevity. Its inertness and chemical stability make it suitable for formulations intended for sensitive areas, including the eye area, as it does not irritate the skin and does not clog pores. It is commonly used in powders, primers, BB creams, lipsticks, and SPF creams, where it serves to improve texture, extend wear, and optimize visual performance on the skin. Thanks to its small particle size and specific shape, it enables better pigment dispersion, increasing color uniformity and achieving a natural-looking complexion. Its presence in formulations simultaneously reduces the feeling of heaviness and greasiness, leaving the skin smooth and dry to the touch without causing dryness.

Physicochemical properties: Polysiloxane appears as a white, fine powder without a characteristic odor. The raw material contains a high percentage of non-volatile matter, ranging from 97.00 to 100%, indicating stability and structural integrity of the polymer. Loss on drying is minimal, ranging from 0.0 to 1.0%, confirming low hygroscopicity and resistance to moisture.

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

The average particle size is 4–6 µm, while the total particle size distribution ranges from 2 to 10 µm. The content of particles smaller than 2 µm is limited to a maximum of 5.0%, and particles larger than 7 µm to a maximum of 10.0%, ensuring uniformity and controlled texture. This granulometric distribution allows stable dispersion in formulations, uniform application on the skin, and consistent achievement of a soft, velvety feel without visible irregularities. Polymethylsilsesquioxane is insoluble in water and does not dissolve in most common polar solvents such as ethanol or glycerin. Due to its polymeric silicone nature, it behaves as an insoluble solid and is used in formulations as a powder, mechanically dispersed. It disperses well in oil phases and silicone fluids and can also be incorporated into emulsion systems, where it provides its characteristic velvety and mattifying effect.

Benefits:

- Provides a velvety, powdery skin feel.
- Ensures smooth and easy product spreadability.
- Diffuses light to even out skin tone and reduce the appearance of imperfections.
- Absorbs excess sebum and delivers a matte effect.
- Enhances makeup longevity and improves product texture.
- Does not irritate the skin and does not clog pores.
- Enables uniform pigment dispersion for a natural complexion.
- Reduces the feeling of heaviness and greasiness in formulations.

Method of use: Polysiloxane is used in cosmetic formulations at various concentrations, depending on the product type and desired effect. In powders and primers, it is typically used at higher levels, between 5 and 15%, to achieve a pronounced mattifying effect, improved texture, and extended makeup wear. In BB creams (Blemish Balm or Beauty Balm), CC creams (Color Correcting), and SPF creams, it is used at moderate concentrations of 2–8%, providing a more even and natural complexion, light diffusion, and reduced greasiness. In lipsticks and other decorative products, it is used at lower levels, typically 1–3%, where it contributes to better pigment dispersion and a silky feel on the lips. When incorporated into creams and serums, lower concentrations of 0.5–2% are used to enhance sensory properties and provide a pleasant, velvety skin feel without heaviness.

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

In products intended for sensitive areas, such as the eye area, it is used at the lower end of the recommended range to ensure safety and a gentle effect.

Natural or synthetic origin: Polysiloxane (Polymethylsilsesquioxane) is a synthetic ingredient obtained through chemical polymerization of silane compounds and is not derived from natural sources.

Animal testing: In accordance with current European regulation (Regulation (EC) No. 1223/2009 on cosmetic products), the substance has not been tested on animals. The safety assessment is based on available toxicological data, scientific literature, and validated alternative testing methods (in vitro and in silico). “In silico” refers to testing and evaluation methods performed using computer models and simulations, rather than on living organisms (in vivo) or cell cultures (in vitro). This statement confirms compliance with the ban on animal testing and is provided for informational purposes regarding the use of the raw material in cosmetic formulations.

GMO: Not GMO

Vegan: Does not contain components of animal origin