MANTA

Technical Data Sheet

Version: 1.0

Manta PMSQ Silicone Resin Powder

Description

Manta PMSQ is a spherical silicone resin powder consisting of high-purity polymethylsilsesquioxane microspheres. It presents as a free-flowing white powder characterized by exceptional slip, superior soft-focus optics, and strong hydrophobicity.

It exhibits selective, moderate absorption of non-polar oils (including human sebum) and is easily dispersible in the oil phase. It acts as an elite sensory enhancer and performance additive across multiple industries. In personal care, it is widely used in color cosmetics, skin care, and sunscreens to enhance makeup wear, provide sebum control, and deliver a long-lasting, velvety-matte finish without agglomeration.

Typical Physical Properties

INCI/CTFA	Polymethylsilsesquioxane
Chemical Description:	Spherical Silicone Resin Microspheres
Appearance	White powder
CAS No.:	68554-70-1
Density (g/cm3)	1.25-1.35
Volatile content (150°C, 3h)	≤ 2%
Oil absorption value (paraffin oil)	0.6-0.9
Average particle size (μm)	2-4(the lowest can match 0.7-0.8 μm)

Note: These values are not intended for use in preparing specifications.

Features

1. True Spherical Geometry: Features a narrow particle size distribution (2-4 μm), ensuring exceptional dispersibility, low adhesion, and severe anti-caking properties.
2. Superior Sensory Profile: Drastically reduces the friction coefficient of formulations, imparting a silky, lubricious, and velvety-smooth tactile feel (eliminating "drag").
3. Advanced Optical Performance: Provides high-efficiency light scattering, delivering a soft-focus (blurring) effect that visually minimizes fine lines and skin imperfections.
4. Selective Sebum Control: Exhibits strong hydrophobicity while moderately absorbing non-polar oils and esters without excessive swelling, prolonging makeup wear and preventing greasiness.
5. Extreme Thermal & Chemical Stability: Completely insoluble in organic solvents and withstands extreme heat (non-melting up to 900°C), vastly outperforming traditional organic resin powders.
6. High-Performance Surface Modifier: Imparts exceptional anti-scratch, anti-blocking, and abrasion-resistant properties to final industrial coatings and films.

Applications

1. Cosmetics & Personal Care: Acts as a sensory modifier and optical blurring agent in liquid

foundations, pressed powders, skin creams, and sunscreens (improves spreadability and delivers a matte finish).
2. Coatings & Inks: Functions as a high-performance matting agent and surface modifier. Significantly improves scratch resistance, abrasion resistance, and provides a premium, soft-touch (haptic) feel to coatings.
3. Plastic Films (PP, PE, PET): Serves as an efficient anti-blocking agent. It prevents film adhesion while maintaining high optical transparency and heat-sealing integrity (a distinct advantage over inorganic silica).
4. Synthetic Resins (Epoxy, Acrylic, ABS): Improves surface smoothness, eliminates caking, and significantly enhances the material's structural wear resistance.
5. Optics & LED Manufacturing: Utilizes its specific refractive index and spherical structure to act as a highly efficient light diffusion agent, eliminating harsh LED glare while maintaining high light transmittance.
6. Rubber Industry & Functional Additives: Enhances the surface smoothness and water repellency of rubber products; acts as a specialized dispersant for pigments and ceramic powders to prevent agglomeration.

How to Use (in Personal Care)

1. Cold Processing: Manta PMSQ is completely cold-processable and does not require heating for incorporation.
2. Dispersion Phase: Pre-disperse the powder in low-viscosity carriers such as dimethicone (e.g., Manta F1006, 2 cSt), cyclomethicone (e.g., Manta F1045), or organic esters (e.g., Isopropyl Myristate) using a standard mixer until completely homogeneous.
3. Emulsification: For emulsion systems (O/W or W/O), add the pre-dispersed powder directly into the oil phase prior to emulsification, ensuring continuous stirring to prevent settling.
4. Recommended Dosage: 1.0% - 20.0% of the total formulation, depending on the desired sensory profile and optical blurring effect.

Packing

In 25kg bag, 50kg bag, 540kg ton bag.

Safety and Storage

Keep away from heat and open flame. Prevent from the exposure of moisture, acid, alkalis and other impurities. When stored in the original unopened containers, this product has a usable life of 24 months from the date of production. This product is non-hazardous product.

Contact Information

Nanjing Manta New Material Co., Ltd
Add: Room 102-247, Building 17, No. 1 Qiliqiao North Road, Nanjing Area of the China (Jiangsu) Pilot Free Trade Zone, Nanjing, China

MANTA

Technical Data Sheet

Version: 1.0

Factory: Miaoguan Town Industrial Park, Sishui County, Jining City, Shandong Province, China
Mob: 0086 18962800162
Mail:sales@mantasil.com Web:www.mantasilicone.com