MANTA

Technical Data Sheet

Version: 1.0

Manta PD21

High-Refractive Index & Ultra-High Temp Phenyl Silane

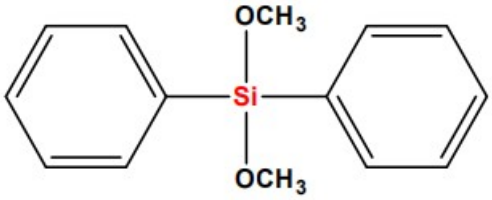
Description

Manta PD21 is diphenyldimethoxysilane that features two bulky phenyl groups attached to the silicon atom. This unique configuration provides superior thermal and oxidative stability compared to mono-phenyl silanes. With a high refractive index of 1.5400, it is a critical component for high-performance optical materials and specialty silicone resins.

As a bifunctional monomer, it acts as a structural building block in the synthesis of silicone fluids, resins, and polymers, offering excellent hydrophobic properties and heat resistance.

It is equivalent to Momentive Silquest Y-15866, Shin-Etsu KBM-102.

Typical Physical Properties

Manta Code:	PD21
Chemical Name	Diphenyldimethoxysilane
CAS NO.	6843-66-9
EINECS NO.	229-929-1
Formula	C14H16O2Si
Appearance	Colorless Transparent Liquid
Density (ρ20℃, g/cm³)	1.0780±0.0050
Refractive Index (n25/D)	1.5400±0.0050
Purity (by GC, %)	99%
Molecular Structure	

Features

- Exceptional Refractive Index: At 1.5400, it is ideal for matching or enhancing the optical clarity of polymers in LED and display applications.
- Superior Thermal Resistance: Provides the highest level of heat stability, preventing yellowing and degradation at temperatures exceeding 300°C.
- Bifunctional Crosslinking: Allows for the creation of linear siloxane chains or modification of resin backbones with high precision.
- Intense Hydrophobicity: Creates a long-lasting moisture barrier on treated surfaces.

Applications

1. High-Performance Silicone Resins & Fluids

Manta PD21 is a fundamental intermediate for the synthesis of phenyl-silicone resins and high-temperature silicone oils. It significantly improves the heat resistance and oxidation stability of lubricants, hydraulic fluids, and insulating oils used in aerospace and automotive sectors.

2. LED Encapsulation & Optical Displays

Due to its high refractive index and excellent transparency, it is widely used in LED packaging and optical lens coatings. It helps maximize light output and ensures long-term clarity by resisting UV-induced and thermal yellowing.

3. Resin Modification (Acrylic, Epoxy, Polyester)

Used to modify organic resins to enhance their thermal stability and hydrophobic nature. In acrylic systems, it can improve weatherability and surface hardness while maintaining optical clarity.

4. Hydrophobic Surface Treatment & Coatings

Acts as an effective surface modifier for glass, ceramics, and inorganic fillers. It imparts a highly hydrophobic finish and can be used as a performance-enhancing additive to other silane coupling agents to boost their heat resistance.

5. Chemical Intermediate for Specialty Silanes

Used as a precursor for more complex organofunctional phenyl silanes and siloxanes utilized in advanced material science and drug synthesis.

6. Semiconductor Packaging

In high-end electronic packaging, Manta PD21 is added to Epoxy Molding Compounds (EMC) to reduce thermal expansion and improve the package's reliability during extreme thermal cycling.

Packaging

In 25kg pail, 200kg drum and 1000kg IBC

Safety and Storage

Keep away from heat and open flame. When stored at or below 25 °C in the original unopened containers, this product has a usable life of 24 months from the date of production.

Contact Information

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