Technical Data Sheet

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Phenyl Silicone Oil LF-PM11

Description:

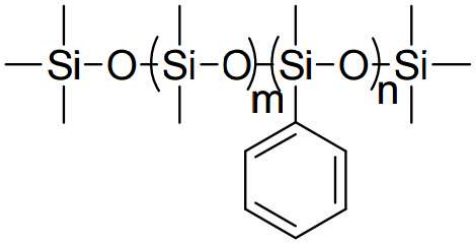
Chemical Name: Phenylmethyl silicone oil

Synonyms: Poly(dimethyl-methylphenyl)siloxane; Methyl Phenyl Silicone Fluid; Methyl Phenyl Silicone Oil; Methyl Phenyl Polysiloxane;

Polymethylphenylsiloxane;

Molecular Structure: $(CH_3)_3SiO$-$[(CH_3)_2SiO]_m$-$[(CH_3)(C_6H_5)SiO]n$ - $Si(CH_3)_3$

Note: The ratio of m to n varies by product grade to achieve specific refractive indices and thermal stability requirements.



Special Features:

- Exceptional Thermal Stability: Delivers outstanding resistance to heat, oxidation, and radiation, ensuring reliable performance across extreme temperatures (typically -40°C to 300°C).
- Superior Optical Properties & Compatibility: Features a high refractive index for brilliant gloss and excellent solubility in organic ingredients, making it ideal for personal care and optical applications.

Typical Technical Properties:

Item	CAS NO.	Viscosity (25°C, mm^2/s)	Refractive Index (25°C， ηD25)	Appearance
LF-PM11A	63148-52-7	50-30000	1.4150-1.4250	Colorless to yellowish transparent liquid
LF-PM11B	63148-52-7	100-1100	1.4900~1.5200	
LF-PM11C	63148-52-7	75-200	1.4900~1.5000	
LF-PM11D High refractive index and compatibility	9005-12-3/63148-58-3	20-500	1.4700~1.5330	

Phenyl Content(mol): 2.0-30.0, customized can be available.

Applications:

1. Industrial Heat Transfer & Thermal Regulation

High-Temperature Heat Transfer Media: Due to its exceptional thermal stability and resistance to oxidation, the product is widely used as a heat transfer fluid in open systems, laboratory oil baths, and solar energy collection systems. It resists gelling and coking even at elevated temperatures (up to 250°C-300°C);

Low-Temperature Applications: Specific grades (Low Phenyl) offer outstanding cold resistance, remaining fluid at temperatures as low as -70°C, making them ideal for refrigeration systems and polar environment equipment.

2. Specialty Lubrication & Hydraulic Fluids

Base Oil for High-Temp Greases: Acts as the primary base fluid for high-temperature greases (e.g., lithium or polyurea based) used in ball bearings, kiln cars, and conveyor systems where mineral oils would fail;

Vacuum Diffusion Pump Fluids: Its low vapor pressure and high resistance to oxidation make it an excellent working fluid for high-vacuum diffusion pumps in electronics manufacturing and metallurgy;

Damping Fluids: Provides stable viscous damping for meters, instruments, and torsional vibration dampers in automotive engines, owing to its high shear stability and excellent viscosity-temperature coefficient.

3. Personal Care & Cosmetics

Hair Care (Serums & Oils): The high phenyl content provides a high refractive index, imparting superior gloss and shine to hair. It is non-greasy and improves the detangling and manageability of hair.

Color Cosmetics & Skin Care: Used in lipsticks, foundations, and sunscreens. It offers excellent compatibility (solubility) with organic ingredients (such as ethanol and organic sunscreens) and aids in the dispersion of pigments, providing a smooth, non-tacky skin feel.

4. Optical & Electronic Applications

Optical Coupling Fluids: Used as a refractive index matching fluid for optical fibers and lens assemblies due to its high clarity and light transmission properties.

Dielectric Coolants: Serves as a dielectric coolant and insulator for transformers, capacitors, and high-voltage electronics, particularly where fire resistance and thermal stability are critical.

Specific performance (e.g., Low Temperature vs. High Refractive Index) depends on the phenyl content. Please consult the specific grade specifications (e.g., Low-Phenyl or High-Phenyl series) for optimal selection.

Package &Storage:

In 25kg and 200kg drum.

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 36 months from the date of production. Storage beyond the shelf life does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.