Technical Data Sheet

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Silfluo LF-OHP2

Diphenyl Hydroxy Silicone Fluid

Description:

The Silfluo LF-OHP2 is a specialty, silanol-terminated diphenyl siloxane polymer. By integrating a high concentration of bulky diphenyl groups into the siloxane backbone, this advanced fluid dramatically shifts the performance boundaries of traditional RTV base polymers.

It boasts a high refractive index (RI), thermal and oxidative stability, and resistance to high-energy radiation. Terminated with reactive hydroxyl (silanol) groups, it functions as a base polymer and crosslinking intermediate. It is highly sought after for formulating optical-grade LED encapsulants and extreme-environment sealants that demand absolute optical clarity and structural integrity under severe duress.

Typical Technical Properties:

Silfluo Code:	LF-OHP2
Chemical Name:	Silanol-Terminated Diphenylsiloxane
Synonyms	Diphenyl Hydroxy Silicone Oil; Hydroxy-Terminated Diphenyl Siloxane
CAS No. :	68951-93-9
Molecular Formula:	$HO-[Si(C_6H_5)_2O]_n-H$
Appearance:	Clear to yellowish transparent highly viscous liquid
Viscosity (25°C, mpa.s):	⩾1000
Density (25°C, g/cm³):	0.98
Refractive Index(25°C, nD25)	1.50~1.54
Chemical Structure:	

Applications:

1. Optical and LED Encapsulants

Used as high refractive index base polymer in optical-grade silicone encapsulants and lens coatings for LED packages. Refractive index of 1.50 – 1.54 reduces the RI mismatch between the encapsulant and the LED chip surface, improving light extraction efficiency. Phenyl groups provide resistance to UV- and thermally-induced yellowing under prolonged LED operating conditions. Formulate with compatible high-RI crosslinker and catalyst; verify optical transmission, RI matching, and yellowing resistance via cured sample testing against LED package specifications.

2. Extreme-Temperature Sealants and Adhesives

Used as base polymer in RTV sealants and protective coatings for applications requiring continuous service at temperatures where standard PDMS-based RTV systems undergo thermal degradation or embrittlement.

Phenyl substituents raise the onset of thermal oxidative degradation relative to methylsiloxane backbones. Select crosslinker type (alkoxy or oxime) based on substrate compatibility and required by-product profile.

3. Radiation-Resistant Potting Compounds

Used in potting compounds for electronic assemblies in aerospace and nuclear environments where exposure to gamma or high-energy radiation is expected. Phenyl groups in the siloxane backbone absorb and dissipate radiation energy, slowing chain scission and network degradation relative to PDMS-based systems. Verify radiation dose tolerance via testing against specific application dose rate and cumulative dose requirements.

4. Block Copolymer Synthesis

Used as silanol-functional diphenylsiloxane block for synthesizing silicone-polyimide, silicone-polycarbonate, and other silicone-organic block copolymers requiring high-temperature flexibility, high RI, and flame retardancy contributions from the silicone segment.

Package &Storage:

In 200kg/drum; 1000kg/IBC.

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 months from the date of production. It is shipped as non-hazardous substance.

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.