



Silfluo LS-M304

Acryloxy Functional Silane (Ultra-Fast UV Curing)

Description:

Silfluo LS-M304 is a highly reactive, bifunctional organosilane chemically identified as 3-Acryloxypropyltrimethoxysilane. Its precise molecular architecture features three hydrolyzable methoxy groups and a highly active, terminal acryloxy double bond.

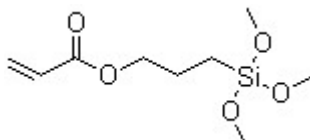
While structurally similar to the conventional methacryloxy silanes (such as MEMO/A-174), the absence of a sterically hindering methyl group on the acryloxy double bond makes LS-M304 exponentially more reactive. It is explicitly engineered for free-radical curing mechanisms—particularly UV (Ultraviolet) and EB (Electron Beam) systems—where ultra-fast curing kinetics are absolutely mandatory. It acts as an elite coupling agent and adhesion promoter, drastically enhancing the mechanical integrity and moisture resistance of rapid-cure acrylics, fiber-optic coatings, and engineered composites.

Performance equivalent to industry standards: Shin-Etsu KBM-5103.

Typical Physical Properties

Silfluo Code:	LS-M304
Chemical Name:	3-Acryloxypropyltrimethoxysilane
Synonyms	3-(Trimethoxysilyl)propyl acrylate
CAS No. :	4369-14-6
EINECS No. :	419-560-6
Molecular Formula:	C ₉ H ₁₈ O ₅ Si
Molecular Weight:	234.32
Appearance:	Colorless transparent liquid
Purity (by GC, %)	97
Density (25°C, g/cm ³)	1.010-1.025
Refractive Index (n ₂₅ /D)	1.4010-1.4050
Boiling Point:	240°C
Flash Point:	82°C Closed Cup

Chemical Structure:



Features

1. Ultra-Fast Free-Radical Reactivity: The unhindered acryloxy functionality drives exceptionally rapid

Technical Data Sheet



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copolymerization in UV, EB, and peroxide-cured systems, significantly outpacing traditional methacryl silanes and increasing high-speed production line throughput.

2. Superior Moisture & Electrical Resistance: Effectively bridges organic resins with inorganic fillers, maintaining the composite's profound mechanical strength and excellent dielectric properties even after prolonged immersion in boiling water.

3. Highly Dense Siloxane Network: The highly reactive trimethoxysilyl groups rapidly hydrolyze to form a robust, densely crosslinked 3D inorganic network on difficult substrates (glass, silica, metals), permanently anchoring the polymer matrix.

4. Optimal Compatibility: Readily integrates into advanced acrylic, unsaturated polyester, and vinyl ester resin systems without causing phase separation or unwanted viscosity spikes.

Applications:

Silfluo LS-M304 is strictly engineered for high-performance, rapid-cure reactive polymer systems:

1. Fiber-Optic Coatings: The absolute material of choice as a critical adhesion promoter in UV-curable primary and secondary fiber-optic coatings, where millisecond-level curing speeds and extreme optical/mechanical stability are required.

2. Advanced UV/EB Inks & Coatings: Utilized in high-end radiation-curable wood coatings, 3D printing resins (SLA/DLP), and electronic conformal coatings to dramatically boost crosslink density and scratch resistance.

3. Artificial Marble & Engineered Stone: Incorporated into highly filled acrylic and unsaturated polyester composites to significantly improve the interfacial bond between the resin matrix and silica/quartz fillers, enhancing the flexural strength of the artificial stone.

4. High-Performance Adhesives & Sealants: Acts as a reactive additive in advanced structural acrylic adhesives and tapes, improving unprimed adhesion to glass and metal substrates.

Packing

In 200kg drum and 1000kg IBC.

Safety and Storage

Keep in a cool, strictly dark, and well-ventilated environment. The shelf life is a minimum of 6 to 9 months from the date of manufacture when stored at or below 25° C (refrigeration preferred for long-term stability) in tightly sealed, original unopened containers.