Technical Data Sheet

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Silfluo LS-D312

Bis-Silyl Functional Crosslinker (BTMSE)

Description

Silfluo LS-D312 is 1,2-Bis(trimethoxysilyl)ethane, a bis-silyl functional silane commonly referred to as BTMSE.

The molecule contains two trimethoxysilyl groups connected by a short ethylene bridge, with no additional organofunctional group such as amino, epoxy, vinyl, or methacryloxy.

The trimethoxysilyl groups hydrolyze and condense under suitable moisture, pH, and catalyst conditions, forming siloxane networks.

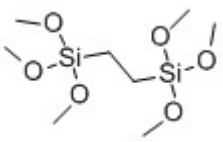
Compared with ethoxy-functional bis-silanes, the methoxy-functional structure gives higher hydrolysis reactivity under equivalent conditions.

Used as crosslinking silane, sol-gel network component, or surface treatment additive in metal pretreatment systems, coatings, sealants, adhesives, and inorganic-organic hybrid formulations.

Performance equivalent to Momentive Y-9805.

Performance equivalent to industry standards: Momentive Y-9805.

Typical Physical Properties

Silfluo Code:	LS-D312
Chemical Name:	1,2-Bis(trimethoxysilyl)ethane
Synonyms	3,3,6,6-Tetramethoxy-2,7-dioxa-3,6-disilaoctane; BTMSE
CAS No. :	18406-41-2
EINECS No. :	242-285-6
Molecular Formula:	$C_8H_{22}O_6Si_2$
Molecular Weight:	270.43
Appearance:	Colorless or light yellow transparent liquid
Purity (by GC, %):	95.0 min
Density (ρ20°C, g/cm³)	1.061-1.071
Refractive Index (n25.D)	1.4010-1.4110
Boiling Point:	104°C(5mmHg)
Flash Point:	109 °C Closed Cup
Chemical Structure:	

Applications

1. Silane conversion coatings and metal pretreatment
Used as silane crosslinking component in chromium-free metal pretreatment systems for aluminum, steel, galvanized steel, and other metal substrates. Verify corrosion resistance, coating adhesion, and process bath stability by customer testing.
2. Sol-gel coatings
Used as building block in sol-gel formulations to support siloxane network formation in inorganic-organic hybrid coatings. Verify network density, crack resistance, and film properties in the target system.
3. Sealants and adhesives
Used as crosslinking silane or adhesion-supporting additive in RTV silicone, MS polymer, SPUR, and hybrid sealant systems. Verify cure behavior, adhesion, and storage stability in the target formulation.
4. Primers and surface treatment
Used in primer systems for glass, metal oxide, mineral, and selected inorganic surfaces. Verify substrate-specific adhesion and treatment efficiency before scale-up.
5. Hybrid coating systems
Used in coating formulations requiring siloxane network formation, moisture resistance, or surface bonding to inorganic substrates. Verify compatibility, film properties, and durability in the target system.

Packaging

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

Safety and Storage

Keep in a cool and dry place and avoid storage in direct sunlight. Shelf life is 24 months.