Technical Data Sheet

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Silfluo LS-D322

Bis-Silyl Functional Crosslinker (BTSE)

Description

Silfluo LS-D322 is 1,2-Bis(triethoxysilyl)ethane, a bis-silyl functional silane commonly referred to as BTSE.

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

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

Compared with methoxy-functional bis-silanes, the ethoxysilane structure shows slower hydrolysis and releases ethanol rather than methanol.

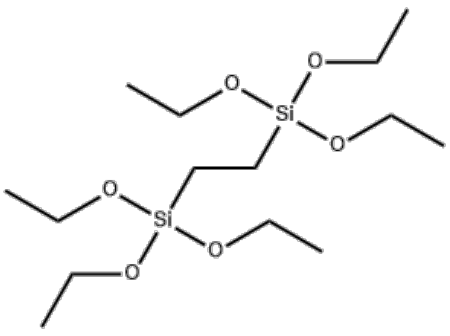
Used as crosslinking silane, sol-gel network component, or surface treatment additive in metal pretreatment systems, coatings, sealants, adhesives, and inorganic-organic hybrid formulations.

Performance equivalent to industry standards: Evonik Dynasylan BTSE.

Typical Physical Properties

Silfluo Code:	LS-D322
Chemical Name:	1,2-Bis(triethoxysilyl)ethane
Synonyms	BTSE / Hexaethoxydisilethane
CAS No. :	16068-37-4
EINECS No. :	240-212-2
Molecular Formula:	$C_{14}H_{34}O_6Si_2$
Molecular Weight:	354.59
Appearance:	Colorless to light yellow transparent liquid
Purity (by GC, %):	95.0 min
Density (ρ20°C, g/cm³)	0.958
Refractive Index (n25/D)	Approx. 1.411
Boiling Point:	119°C; 88°C (0.003 kPa)
Flash Point:	113 °C closed cup
Water solubility:	Reacts slowly (requires acid.base catalysis for optimal hydrolysis)

Chemical Structure:



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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, bath stability, and process window 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 25kg pail, 200kg drum and 1000kg IBC

Safety and Storage

Keep in a cool and dry place and avoid storage in direct sunlight. Shelf life is min. 12 months. It is shipped as non-hazardous substance.

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