

SiSiB® STP31009 Silane Terminated Polyether Polymer

BACKGROUND

Polyurethane sealants provide good mechanical strength and paintability but may contain solvents or free isocyanates and generally offer lower weathering resistance than silicone systems. Silicone sealants provide excellent weathering resistance, flexibility, and thermal stability, but are generally difficult to paint and may cause staining on some porous substrates.

Silane-terminated polyether (STP) polymers combine many of the advantages of polyurethane and silicone technologies. They are particularly suitable for the formulation of high-performance elastic adhesives, sealants, and coatings and enable solvent-free and isocyanate-free formulations with low VOC emissions.

INTRODUCTION

SiSiB® STP31009 is an alkoxy silane-terminated polyether polymer designed as a base polymer for moisture-curing, high-modulus elastic adhesives, sealants, and coatings.

Upon exposure to moisture, the terminal alkoxysilane groups undergo hydrolysis and subsequent condensation to form a crosslinked siloxane network.

SiSiB® STP31009 combines high reactivity, high modulus, good storage stability, and high transparency. It can be used in both one-component and two-component formulations and can be blended with other compatible STP polymers to adjust the properties of the finished formulation.

FEATURES & BENEFITS

- High reactivity and high modulus
- High transparency
- Enables good adhesion, tensile strength, and elasticity
- Fast moisture curing
- Compatible with tin-free catalyst systems
- Excellent aging and yellowing resistance
- Excellent water and chemical resistance
- Excellent storage stability
- Suitable for solvent-free and isocyanate-free formulations
- Good compatibility with other STP polymers

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PHYSICAL PROPERTIES

Color	Colorless to slight yellow
Appearance	Clear liquid
Viscosity (25°C, mPa·s)	7,000-10,000
Density (25°, g/cm³)	1.0
Boiling point (°C)	> 250
Flash point (°C)	> 237
Water solubility	Virtually insoluble

These values are typical and not intended for specification purposes.

APPLICATIONS

SiSiB® STP31009 is used as a base polymer for moisture-curing elastic adhesives, sealants, and coatings. Typical applications include:

- High-modulus elastic sealants
- High-strength elastic adhesives
- Encapsulation adhesives
- Elastic sealing coatings
- Construction adhesives and sealants
- Transportation-industry elastic sealants
- General industrial bonding and sealing
- DIY and decorative sealants

SiSiB® STP31009 is suitable for both one-component and two-component systems.

PROCESSING

SiSiB® STP31009 silyl terminated polyether readily dissolves in standard organic solvents but is virtually insoluble in water. Despite its highly reactive terminal groups, uncatalyzed SiSiB® STP31009 remains stable in air for several days. However, its reactivity with water or atmospheric humidity must be considered during storage and processing, as exposure may lead to slow condensation.

SiSiB® STP31009 silyl terminated polyether can be processed using both hot and cold methods, and are suitable for both one component and two-

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component formulations. To prevent premature curing during formulation or exposure to moisture during storage, the addition of a water scavenger is recommended, SiSiB® PC6110 (vinyltrimethoxysilane) is commonly used.

PACKING

SiSiB® STP31009 is supplied in 200Kg steel drum or 1000Kg IBC tote.

STORAGE

SiSiB® STP31009 has a shelf life of 12 months from the date of manufacture when stored in its original, unopened containers below 30°C. After opening, containers should be tightly sealed to prevent contamination and moisture from entering the product.

HANDLING

This document does not contain the product safety information required for safe use. Before handling, please refer to the product and safety data sheets, as well as container labels, for information on safe usage, physical hazards, and health risks. Safety Data Sheet is available on the website, from the distributor, or by contacting SiSiB customer service.

NOTE

All information in the leaflet is based on our present knowledge and experience. We reserve the right to make any changes according to technological progress or further developments. Performance of the product described herein should be verified by testing.

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