

SiSiB® STP93500 Silane Terminated Polyether Polymer

BACKGROUND

Polyurethane sealants offer good mechanical strength and are paintable but often contain solvents and have limited weather resistance. Silicone sealants provide excellent aging resistance, flexibility, and thermal stability but cannot be painted and may cause staining on absorbent surfaces.

Silane terminated polyether polymers (STP), also known as silane-modified polymers or MS polymers, combine the advantages of polyurethane and silicone without their weakness.

STP-based formulations are solvent-free and isocyanate-free, curing without bubble formation or odor release, and exhibit low VOC emissions with excellent paintability.

INTRODUCTION

SiSiB® STP93500 is a silyl-terminated polyether (STP) polymer designed as a base polymer in moisture-curing, medium modulus adhesives, sealants, and coatings. When exposed to atmospheric moisture, it reacts through hydrolysis and crosslinking to create highly durable elastomeric materials.

SiSiB® STP93500 offers a balanced combination of durability, reactivity, and storage stability. Adhesives and sealants formulated with this polymer exhibit broad adhesion, good mechanical strength, and deliver excellent flexibility, weather resistance, and environmentally friendly curing performance.

FEATURES & BENEFITS

- Medium modulus, low viscosity
- Fast moisture curing without bubbling
- Broad adhesion to various substrates
- Excellent UV, weathering, and chemical resistance
- High elastic recovery
- Solvent-free, isocyanate-free, low VOC
- Long shelf life and storage stability
- Suitable for single-component or two-component formulations

PHYSICAL PROPERTIES

Appearance	Light yellow clear liquid
Boiling point	>250°C
Density 25°C	1.00
Viscosity (25°C, mPa·s)	5,000-9,000

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Flash point	>237°C
Water solubility/miscibility	Virtually insoluble

Note: These values are typical and not intended for specification purposes.

APPLICATIONS

Construction: Facade joints, window and door sealing, curtain wall panels, roof expansion joints

Automotive: Body seams, glass installation, interior trim bonding

Electronics: Joint sealing, moisture protection, thermal adhesive bonding

DIY & Consumer: Kitchen & bathroom sealing, flooring joints, tile grouting

Marine: Long-lasting, weather-resistant sealing for marine structures, boats, and ships

PROCESSING

SiSiB[®] STP93500 silyl terminated polyether readily dissolves in standard organic solvents but is virtually insoluble in water. Despite its highly reactive terminal groups, uncatalyzed SiSiB[®] STP93500 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[®] STP93500 silyl terminated polyether can be processed using both hot and cold methods, and are suitable for both one component and two-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[®] STP93500 is available in 200Kg steel drum and 1000Kg IBC tote.

STORAGE

SiSiB[®] STP93500 has a shelf life of 12 months from the date of manufacture when stored in original, unopened containers at 4-30°C. After opening, containers must be tightly resealed to prevent contamination and moisture ingress.

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

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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.

We specifically disclaim any other express or implied warranty of fitness for a particular purpose or merchantability.

We disclaim liability for any incidental or consequential damages.

APPENDIX: UNDERSTANDING SEALANT MODULUS

Modulus	Key Characteristics	Typical Applications
Low	<ul style="list-style-type: none">High flexibilityAccommodates significant joint movementExerts low stress on substrates	<ul style="list-style-type: none">Facade jointsCurtain wallsGlazing applicationsExpansion joints in concrete structuresAreas with significant thermal or structural movement
Medium	<ul style="list-style-type: none">Balanced flexibility and strengthSuitable for general-purpose sealingModerate stress on substrates	<ul style="list-style-type: none">Perimeter sealing of windows and doorsControl joints in masonryPrecast concrete panel jointsGeneral construction applications
High	<ul style="list-style-type: none">High strength and rigidityLimited flexibilityExerts higher stress on substrates	<ul style="list-style-type: none">Structural glazingNon-moving jointsIndustrial applications requiring high strengthAreas where joint movement is minimal