SiSiB® STP81600 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® STP81600 is a low-viscosity, high-strength silane-terminated polyether polymer specifically formulated for moisture-curing adhesives and sealants. It cures into a transparent, high-hardness material with excellent adhesion to metals, glass, ceramics, and various substrates.

FEATURES & BENEFITS

- Low viscosity for easy processing
- High strength, high modulus, and Shore D hardness after curing
- Transparent, plasticizer-free formulation
- Excellent adhesion to metals, glass, ceramics, and plastics
- Fast moisture-curing reaction
- Solvent-free and isocyanate-free
- Excellent paintability and weather resistance

PHYSICAL PROPERTIES

Appearance	Transparent liquid
Density 25°C, g/cm^3	0.98-1.02
Viscosity 25°C, mPa.s	1,000-3,000
Flash Point	> 100°C

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

APPLICATIONS

SiSiB® STP81600 is used across construction, automotive, electronics, and marine industries. It is ideal for applications requiring fast curing, strong adhesion, and long-term environmental resistance. In construction, it is

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suitable for façade joints, curtain wall sealing, window and door perimeter sealing, and expansion joints. In automotive, it is used for body seams, glass bonding, and interior trim assembly. The product also supports sealing and bonding in electronics, consumer DIY, marine, and flooring applications where durability and flexibility are critical.

PROCESSING

SiSiB® STP81600 silyl terminated polyether readily dissolves in standard organic solvents but is virtually insoluble in water. Despite its highly reactive terminal groups, uncatalyzed SiSiB® STP81600 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® STP81600 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® STP81600 is available in 200Kg steel drum and 1000Kg IBC tote.

STORAGE

SiSiB® STP81600 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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We disclaim liability for any incidental or consequential damages.

APPENDIX: UNDERSTANDING SEALANT MODULUS

Modulus	Key Characteristics	Typical Applications
Low	• High flexibility • Accommodates significant joint movement • Exerts low stress on substrates	• Facade joints • Curtain walls • Glazing applications • Expansion joints in concrete structures • Areas with significant thermal or structural movement
Medium	• Balanced flexibility and strength • Suitable for general-purpose sealing • Moderate stress on substrates	• Perimeter sealing of windows and doors • Control joints in masonry • Precast concrete panel joints • General construction applications
High	• High strength and rigidity • Limited flexibility • Exerts higher stress on substrates	• Structural glazing • Non-moving joints • Industrial applications requiring high strength • Areas where joint movement is minimal