

## SiSiB® STP90030 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® STP90030 is a polyether-based silane-terminated polymer developed for moisture-curing adhesive and sealant formulations. It is a clear, slightly odorous liquid with significantly higher reactivity than conventional silylated polymers. Upon exposure to moisture, the polymer hydrolyzes and condenses to form a stable siloxane crosslinked network. The curing process can proceed under mild catalysis conditions, eliminating the need for heavy metal catalysts. The polymer's combination of high reactivity, environmental compliance, and versatile performance makes it suitable for a wide range of applications in construction, transportation, electronics, and consumer markets.

### FEATURES & BENEFITS

- High reactivity and rapid moisture curing
- Transparent, plasticizer-free and tin-free formulation
- Broad adhesion to many substrates without primer
- Low modulus, acid-resistant cured network
- Excellent durability, long shelf life
- Free of isocyanates and solvents

### PHYSICAL PROPERTIES

Color	Colorless to light yellow
Appearance	Liquid
Viscosity (25°C, mPa·s)	25,000-35,000
Density (25°C, g/cm <sup>3</sup> )	1.00

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Boiling Point	>250°C
Flash Point	>237°C
Water-Soluble	Virtually Insoluble

### APPLICATIONS

SiSiB® STP90030 is suitable as a reactive binder in a wide range of moisture-curing systems including construction adhesives, flooring compounds, interior and exterior sealants, home DIY glues, and industrial bonding agents. It is especially advantageous where transparent, environmentally friendly, or isocyanate-free formulations are required.

### PROCESSING

SiSiB® STP90030 polymer is readily soluble in common organic solvents such as ethanol but exhibits very low solubility in water. As a result, most components in a formulation system based on SiSiB® STP90030 are typically oil-soluble.

SiSiB® STP90030 polymer curing mechanism: silane of both ends with the help of the catalyst react with water forming hydrolysis to generate silanol, silanol is crosslinked with catalyst to form a siloxane bond, resulting in a network-like structure.

SiSiB® STP90030 polymer 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® STP90030 is supplied in 200Kg steel drum or 1000Kg IBC tote.

### STORAGE

SiSiB® STP90030 has a shelf life of 12 months from the date of manufacture. When stored in its original, unopened containers at 4°C-30°C dry environment. 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

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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"> <li>High flexibility</li> <li>Accommodates significant joint movement</li> <li>Exerts low stress on substrates</li> </ul>	<ul style="list-style-type: none"> <li>Facade joints</li> <li>Curtain walls</li> <li>Glazing applications</li> <li>Expansion joints in concrete structures</li> <li>Areas with significant thermal or structural movement</li> </ul>
Medium	<ul style="list-style-type: none"> <li>Balanced flexibility and strength</li> <li>Suitable for general-purpose sealing</li> <li>Moderate stress on substrates</li> </ul>	<ul style="list-style-type: none"> <li>Perimeter sealing of windows and doors</li> <li>Control joints in masonry</li> <li>Precast concrete panel joints</li> <li>General construction applications</li> </ul>
High	<ul style="list-style-type: none"> <li>High strength and rigidity</li> <li>Limited flexibility</li> <li>Exerts higher stress on substrates</li> </ul>	<ul style="list-style-type: none"> <li>Structural glazing</li> <li>Non-moving joints</li> <li>Industrial applications requiring high strength</li> <li>Areas where joint movement is minimal</li> </ul>