MANTA



SMP Polymer Selection Guide

Silane-modified and silane-terminated polymers
for sealants, adhesives and coatings

Nanjing Manta New Material Co., Ltd.



Moisture-curing polymers, grouped by performance

Silane-modified polymers are alkoxysilane-terminated polymers with a polyoxypropylene main chain. The alkoxysilyl groups hydrolyze and crosslink with ambient moisture, which makes them suitable for moisture-curing elastic sealants, adhesives and coatings.

This guide groups the Manta grades by viscosity, modulus and activity and gives the typical properties of each grade as stated in its TDS.

- **Adhesion to many substrates**
- **Fast curing**
- **Water resistance**
- **Paintable surface**
- **Bubble-free curing**
- **Grades for high strength**

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Viscosity Overview

Viscosity at 25 °C of each grade, as given in its TDS, on a logarithmic scale.





Low Viscosity & Higher Modulus

Industrial, floor and seam adhesives and sealants

- High filler loadings possible with MS312 and MS2628
- MS305D cures to Shore A 70 with tensile strength ≥ 3.0 MPa
- MS2628 is suitable for hot and cold blending and gives a short tack-free time
- Solvent-free and isocyanate-free formulations

Polymers recommended: Manta MS305D

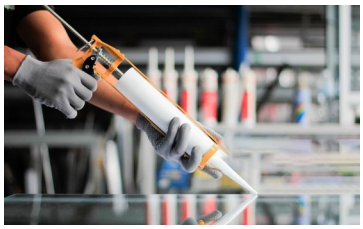
Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Transparent viscous liquid		
Activity	High	**Modulus**	High
Viscosity at 25 °C	1,400–1,600 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³
pH Value	6–8	**Tack-Free Time**	30 min
Tensile Strength	≥ 3.0 MPa	**Elongation at Break**	≥ 60 %
Hardness, Shore A	70		





Polymers recommended: Manta MS311

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Colorless, transparent viscous liquid		
Activity	High	**Modulus**	Medium-high
Viscosity at 25 °C	4,000–5,000 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³
Tack-Free Time	30 min		





Low Viscosity & Higher Modulus (continued)

Polymers recommended: Manta MS2628

Typical Properties & Features Attainable			
Product	Silyl-terminated polyether (STPE)		
Appearance	Light yellow viscous liquid		
Modulus	High	**Viscosity at 25 °C**	6,000–9,000 mPa·s
Density at 25 °C	1.002–1.005 g/cm³	**pH Value**	6.0–9.0

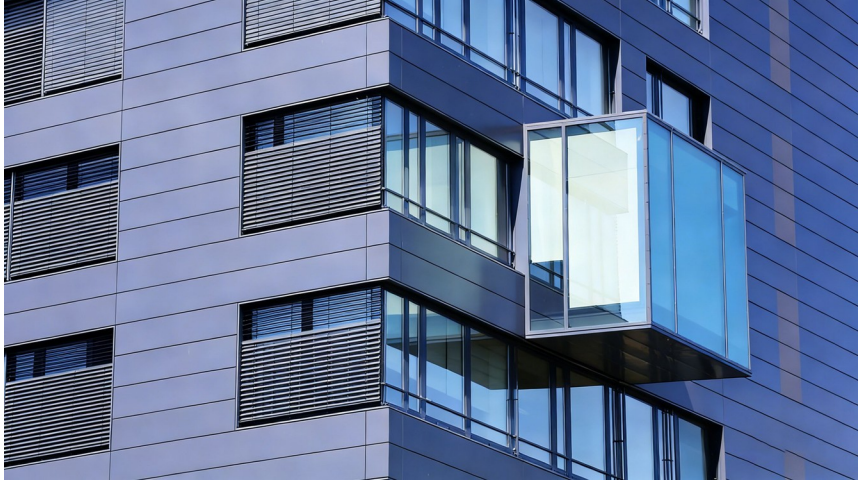
Polymers recommended: Manta MS312

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Colorless, transparent viscous liquid		
Activity	Medium	**Modulus**	Medium-high
Viscosity at 25 °C	8,000–13,000 mPa·s	**Density at 25 °C**	1.02–1.05 g/cm³
pH Value	6–9 (sample 7)	**Tensile Strength**	≥ 0.5 MPa (sample 0.53)
Elongation at Break	≥ 50 % (sample 60)	**Hardness, Shore A**	≥ 35 (sample 40)

Sample = result of the cured reference sample in the TDS of the grade.







Medium Viscosity & Low to Medium Modulus

Joint, facade and transportation sealants

- High activity in all grades of this group
- MS201S and MS27: low modulus with high elastic recovery; tin-free catalysts can be used
- MS3303I: low-to-medium modulus for joints with high movement
- MS3303M: paintable surface; MS3303H: elongation at break ≥ 300 %

Polymers recommended: Manta MS201S

Typical Properties & Features Attainable			
Product	Silyl-terminated polyether (STPE)		
Appearance	Transparent to slightly yellow viscous liquid		
Activity	High	**Modulus**	Low
Viscosity at 25 °C	18,000–28,000 mPa·s	**Density at 25 °C**	approx. 1.0 g/cm³



Polymers recommended: Manta MS27

Typical Properties & Features Attainable			
Product	Silyl-terminated polyether (STPE)		
Appearance	Transparent to slightly yellow viscous liquid		
Activity	High	**Modulus**	Low
Viscosity at 25 °C	28,000–38,000 mPa·s	**Density at 25 °C**	approx. 1.0 g/cm³



Polymers recommended: Manta MS3303I

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Transparent viscous liquid		
Activity	High	**Modulus**	Low-medium
Viscosity at 25 °C	35,000–45,000 mPa·s	**pH Value**	6.0–9.0 (sample 7.0)
Tensile Strength	≥ 0.5 MPa (sample 0.58)	**Elongation at Break**	≥ 100 % (sample 117.6)
Hardness, Shore A	≥ 25 (sample 29)		

Sample = result of the cured reference sample in the TDS of the grade.

Medium Viscosity & Low to Medium Modulus (continued)



Polymers recommended: Manta MS3303M

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Transparent viscous liquid		
Activity	High	**Modulus**	Medium
Viscosity at 25 °C	40,000–50,000 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³



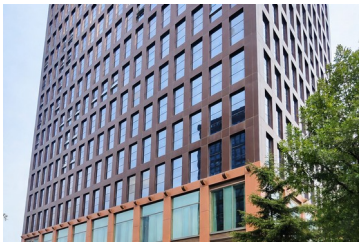
Polymers recommended: Manta MS3303T

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Transparent viscous liquid		
Activity	High	**Modulus**	Medium
Viscosity at 25 °C	40,000–50,000 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³



Polymers recommended: Manta MS3303H

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Transparent viscous liquid		
Activity	High	**Modulus**	Medium
Viscosity at 25 °C	50,000–60,000 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³
pH Value	6–9	**Tack-Free Time**	30 min
Tensile Strength	≥ 1.95 MPa	**Elongation at Break**	≥ 300 %
Hardness, Shore A	≥ 38		





Medium Viscosity, Strength & Elongation

Elastic and semi-structural adhesives and sealants

- MS330A and MS330C: high activity and medium-high modulus
- Colorless, transparent MS330A and MS330C for clear formulations
- MS7500: high modulus with high tensile strength and elongation
- MS7500 can be processed by hot or cold compounding

Polymers recommended: Manta MS330A

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Colorless, transparent viscous liquid		
Activity	High	**Modulus**	Medium-high
Viscosity at 25 °C	25,000–35,000 mPa·s	**Density at 25 °C**	1.02–1.05 g/cm³
pH Value	6–9 (sample 7.0)	**Tensile Strength**	≥ 0.5 MPa (sample 0.77)
Elongation at Break	≥ 80 % (sample 109)	**Hardness, Shore A**	≥ 35 (sample 36)



Polymers recommended: Manta MS330C

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Colorless, transparent viscous liquid		
Activity	High	**Modulus**	Medium-high
Viscosity at 25 °C	25,000–35,000 mPa·s	**Density at 25 °C**	1.02–1.05 g/cm³
pH Value	6–9 (sample 7.0)	**Tensile Strength**	≥ 0.5 MPa (sample 0.82)
Elongation at Break	≥ 80 % (sample 136)	**Hardness, Shore A**	≥ 30 (sample 32)



Polymers recommended: Manta MS7500

Typical Properties & Features Attainable			
Product	Silyl-terminated polyether (STPE)		
Appearance	Light yellow viscous liquid		
Modulus	High	**Viscosity at 25 °C**	40,000–60,000 mPa·s
Density at 25 °C	1.002–1.005 g/cm³	**pH Value**	6.0–9.0



Sample = result of the cured reference sample in the TDS of the grade.



Medium-High to High Viscosity

Sealants and adhesives with high polymer content

- MS330B: less fumed silica needed for thixotropy and a higher polymer content relative to fillers
- MS314 and SPUR M3015: low modulus with good elastic recovery
- SPUR M3050: medium modulus for applications requiring tensile strength
- SPUR resins contain no plasticizer



Polymers recommended: Manta MS3310

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Transparent viscous liquid		
Activity	Medium	**Modulus**	Medium-high
Viscosity at 25 °C	45,000–55,000 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³
pH Value	6.0–9.0 (sample 7.0)	**Tensile Strength**	≥ 0.5 MPa (sample 0.54)
Elongation at Break	≥ 100 % (sample 124.8)	**Hardness, Shore A**	≥ 20 (sample 29)



Polymers recommended: Manta MS330B

Typical Properties & Features Attainable			
Product	Trimethoxysilyl-terminated polyether (STPE)		
Appearance	Transparent viscous liquid		
Activity	Medium	**Modulus**	Medium-high
Viscosity at 25 °C	60,000–70,000 mPa·s	**pH Value**	6.0–9.0 (sample 7.0)
Tensile Strength	≥ 0.7 MPa (sample 0.79)	**Elongation at Break**	≥ 100 % (sample 117)
Hardness, Shore A	≥ 30 (sample 34)		



Sample = result of the cured reference sample in the TDS of the grade.

Medium-High to High Viscosity (continued)

Polymers recommended: Manta MS314

Typical Properties & Features Attainable			
Product	Silane-modified polyether (STPE/SMP)		
Appearance	Colorless, transparent viscous liquid		
Activity	Medium	**Modulus**	Low
Viscosity at 25 °C	80,000–130,000 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³
Tack-Free Time	30 min		

Polymers recommended: Manta SPUR M3050

Typical Properties & Features Attainable			
Product	Silylated polyurethane resin (SPUR), plasticizer-free		
Appearance	Slightly yellow viscous liquid		
Modulus	Medium	**Viscosity at 25 °C**	35,000–55,000 mPa·s
Density at 25 °C	approx. 1.0 g/cm³		

Polymers recommended: Manta SPUR M3015

Typical Properties & Features Attainable			
Product	Silylated polyurethane resin (SPUR), plasticizer-free		
Appearance	Slightly yellow viscous liquid		
Modulus	Low	**Viscosity at 25 °C**	90,000–120,000 mPa·s
Density at 25 °C	1.02–1.05 g/cm³		







High Transparency, Fast Curing & No Organotin

Clear sealants, adhesives and wood bonding

- MS310A, MS313 and MS350 cure without organotin catalysts
- MS310A and MS313 are colorless, transparent polymers
- High filler loadings possible with MS310A
- MS350: low viscosity, for wood bonding adhesives without solvents or plasticizers
- MS350: 200 kg steel drums only; highly reactive, and an IBC does not seal as well



Polymers recommended: Manta MS310A

Typical Properties & Features Attainable			
Product	High-reactivity silane-terminated polyether (STPE)		
Appearance	Colorless, transparent viscous liquid		
Activity	High	**Viscosity at 25 °C**	8,000–12,000 mPa·s
Density at 25 °C	1.005–1.006 g/cm³		



Polymers recommended: Manta MS313

Typical Properties & Features Attainable			
Product	High-reactivity silane-terminated polyether (STPE)		
Appearance	Colorless, transparent viscous liquid		
Activity	High	**Viscosity at 25 °C**	30,000–42,000 mPa·s
Density at 25 °C	1.005–1.006 g/cm³		



Polymers recommended: Manta MS350

Typical Properties & Features Attainable			
Product	Silicone-modified silane-terminated polyether		
Appearance	Transparent liquid		
Activity	High	**Viscosity at 25 °C**	500–1,000 mPa·s
Density at 25 °C	1.13 g/cm³		



Low to Medium Activity

Sealants, adhesives and reactive plasticizers

- MF3: low activity and low shrinkage; also used as a reactive plasticizer
- MS4000H: low-medium activity and medium modulus, for medium hardness
- MS2030T and MS3030T: moderate activity and moderate modulus

Polymers recommended: Manta MF3



Typical Properties & Features Attainable			
Product	Low-viscosity silane-terminated polyether		
Appearance	Yellow viscous liquid		
Viscosity at 25 °C	1,000–2,000 mPa·s	**Density at 25 °C**	1.02–1.05 g/cm³

Polymers recommended: Manta MS4000H



Typical Properties & Features Attainable			
Product	Silyl-terminated polyether (STPE)		
Appearance	Light yellow viscous liquid		
Activity	Low-medium	**Modulus**	Medium
Viscosity at 25 °C	15,000–30,000 mPa·s	**Density at 25 °C**	1.002–1.005 g/cm³
pH Value	6.0–9.0	**Tack-Free Time**	30 min
Tensile Strength	≥ 0.4 MPa	**Elongation at Break**	≥ 100 %
Hardness, Shore A	≥ 20		

Polymers recommended: Manta MS2030T



Typical Properties & Features Attainable			
Product	Silyl-terminated polyether (STPE), SMP type		
Appearance	Light yellow, transparent liquid		
Activity	Moderate	**Modulus**	Moderate
Viscosity at 25 °C	6,000–10,000 mPa·s	**Density at 25 °C**	approx. 1.0 g/cm³

Polymers recommended: Manta MS3030T

Typical Properties & Features Attainable			
Product	Silyl-terminated polyether (STPE), SMP type		
Appearance	Light yellow, transparent liquid		
Activity	Moderate	**Modulus**	Moderate
Viscosity at 25 °C	10,000–15,000 mPa·s	**Density at 25 °C**	approx. 1.0 g/cm³



Mineral Surface Protection

Silane-modified polyether binder

- Penetrating impregnation and thin topcoats (typically < 100 µm wet film) on paving stones and concrete floors
- Low viscosity, approx. 150 mPa·s, for good penetration into porous mineral substrates
- Designed for tin-free amine catalysis; no organotin catalyst is required
- Contains no solvents or plasticizers
- Resistance to water ingress and oily stains

Polymers recommended: Manta MS692

Typical Properties & Features Attainable			
Product	Silane-modified polyether binder for mineral surface protection		
Appearance	Clear to pale yellow liquid		
Viscosity at 25 °C	approx. 150 mPa·s	**Density at 25 °C**	1.13 g/cm³
Active Content	100 % (solvent- and plasticizer-free)		



Supply and Support

Packaging

- 50 kg plastic drums and 200 kg drums with aluminum-foil liner bag
- 1,000 kg IBC (tote)
- Other pack sizes on request
- Exception: MS350 only in 200 kg steel drums. It is highly reactive and hydrolyzes easily, and an IBC does not seal as well
- Samples for evaluation

Handling

- Keep containers tightly closed and process under dry conditions
- Dry fillers before compounding; vinyltrimethoxysilane (VTMO) is recommended as water scavenger

Quality and documents

- ISO 9001:2015 certified quality management system
- TDS, SDS and COA available for each grade on request

Custom grades and support

- Polymers with other viscosity, reactivity or modulus on request, subject to technical review
- Help with grade selection and starting formulations

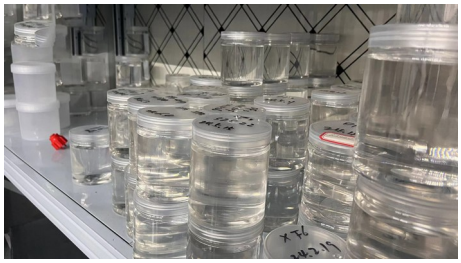












To select a grade, please tell us

- Product: sealant, adhesive, potting, coating
- Substrates to bond
- Clear or pigmented product
- Required modulus, hardness and elongation
- Catalyst system: tin or tin-free
- Quantity and packaging

The information in this guide is given in good faith and based on our current knowledge. Values are typical unless stated as specifications and do not form part of a sales specification. Users should test the products to determine their suitability for the intended use. The latest TDS and SDS of each grade apply.



Nanjing Manta New Material Co., Ltd.

Add: Room 102-247, Building 17, No. 1 Qiliqiao North Road, Nanjing Area of the China (Jiangsu) Pilot Free Trade Zone, Nanjing, China

Factory: Miaoguan Town Industrial Park, Sishui County, Jining City, Shandong Province, China

Mob: +86 18961071292

Mail: inquiry@mantasil.com

Web: www.mantasil.com