MANTA

Technical Data Sheet

Version: 1.0

Manta MS330B

Silyl-terminated polyether (STPE), SMP type

Description

Manta MS330B is an alkoxysilane-terminated polyether (STPE, also known as silane-modified polymer, SMP) with a polypropylene oxide (PPO) backbone. It is designed for moisture-curing systems that require a balance of flexibility and crosslinking.

Compared with conventional silicone and polyurethane systems, MS330B is solvent-free and isocyanate-free and is suitable for low-VOC formulations. It cures with low odor and without bubbles, giving a smooth surface that can be painted over. With good adhesion to many substrates without primer, MS330B is used as a binder for elastic sealants, structural adhesives and protective coatings in construction, transportation and general industry; renewable energy applications are subject to testing.

Performance similar to Kaneka SAX510.

Typical Physical Properties

Manta Code:	MS330B
Chemical Name:	Silane-terminated polyether
Appearance:	Transparent viscous liquid
Flash Point:	≥ 100 °C
Viscosity (25 °C):	60,000 – 70,000 mPa·s
Activity:	Medium
Modulus:	Medium-high
Chemical Structure:	

Properties

- Transparency: high transparency and a colorless appearance for clear sealants.
- Weathering: good resistance to UV radiation, thermal aging and yellowing.
- Curing: cures at room temperature with organotin or tin-free (amine) catalysts.
- Mechanical properties: good bond strength combined with tensile elasticity and elastic recovery.
- Resistance: cured formulations retain adhesion under prolonged exposure to water and many chemical solvents.
- Storage stability: good shelf-life stability, also in highly filled formulations.
- Environmental profile: solvent-free (100 % solids), isocyanate-free and low odor; suitable for low-VOC formulations.
- Blending: can be blended with other Manta polymers or compatible resins to adjust mechanical properties.

Applications

Manta MS330B is used as the reactive binder in adhesives, sealants, potting compounds and coatings. It cures at ambient temperature with atmospheric moisture, typically accelerated by amine or organotin catalysts.

It can be formulated as one-component (1K) or two-component (2K) systems with good adhesion to many substrates without primer.

Formulation notes:

- Thixotropy: because of its high base viscosity, less fumed silica is typically needed to reach the required thixotropy, which can reduce formulation cost and may improve the properties of the finished sealant.
- Polymer-to-filler ratio: the higher viscosity allows a higher polymer content relative to fillers, which contributes to the mechanical strength, durability and elasticity of the finished product.

Processing

1. Moisture sensitivity: the alkoxysilane end groups of MS330B hydrolyze and crosslink on contact with water or atmospheric moisture. Store the polymer in tightly sealed containers and process it under moisture-controlled conditions to avoid premature gelation.
2. Fillers: MS330B can be compounded with common fillers such as precipitated calcium carbonate (PCC), ground calcium carbonate (GCC), fumed silica, quartz flour, diatomaceous earth and aluminum hydroxide. The polymer content can be adjusted to the required properties.
3. Drying: dry all fillers thoroughly before compounding. Vinyltrimethoxysilane (VTMO) is recommended as a water scavenger.
4. Plasticizers: suitable plasticizers include phthalates (e.g., DINP, DIDP), DOTP and low-molecular-weight polyethers (PPG).
5. Additives: adhesion promoters, antioxidants, fungicides and UV/light stabilizers can be added to adjust the end-use properties.

Typical Performance of a Reference Sample

MS330B Test Item	Standard	Result
Appearance	Colorless, transparent liquid	Colorless, transparent liquid
Viscosity (25 °C), mPa·s	60,000 – 70,000	65,170
pH Value	6.0 – 9.0	7.0
Tensile Strength, MPa	≥ 0.7	0.79
Elongation at Break, %	≥ 100	117
Hardness, Shore A	≥ 30	34

Packing

50 kg plastic drum with aluminum-foil liner bag;
200 kg drum with aluminum-foil liner bag;
1,000 kg IBC (tote);
Other pack sizes available on request.

Safety and Storage

Store in the tightly closed original container in a cool, dry place, protected from moisture and direct sunlight. Shelf life: 12 months from the date of production when stored as recommended. The product is classified as non-hazardous. Refer to the current Safety Data Sheet (SDS) for safety,

handling and transport information.

Note: The values in this data sheet are typical values and are not intended for use in preparing specifications. Users should test the product to determine its suitability for their specific application.

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