MANTA

Technical Data Sheet

Version: 1.0

Manta MS314

Silyl-terminated polyether (STPE), SMP type

Description

Manta MS314 is an alkoxysilane-terminated polyether (STPE, also known as silane-modified polymer, SMP) based on a polypropylene oxide (PPO) backbone.

Its alkoxysilane groups hydrolyze and crosslink on exposure to moisture, which makes MS314 suitable for moisture-curing elastic sealants, elastic structural adhesives and sealing coatings. Compared with conventional silicone and polyurethane sealants and adhesives, it is solvent-free and isocyanate-free, suitable for low-VOC formulations, gives a paintable surface, cures without bubble formation and adheres well to many substrates. Typical fields of use are construction, general industry and transportation; new energy applications are subject to testing.

Typical Physical Properties

Manta Code:	MS314
Chemical Name:	Silane-modified polyether
Appearance:	Colorless, transparent viscous liquid
Flash Point:	> 100 °C
Viscosity (25 °C):	80,000 – 130,000 mPa·s
Density (25 °C):	1.002 – 1.005 g/cm³
Tack-Free Time:	30 min
Activity:	Medium
Modulus:	Low

Properties

- Medium activity, low modulus: the moisture-reactive alkoxysilane groups cure at room temperature.
- High transparency: suitable for clear sealants, coatings and adhesive systems.
- Viscosity: designed for compounding in filled elastic systems.
- Durability: cured formulations show good resistance to aging, yellowing, water and chemical solvents.
- Adhesion: good bond strength on many substrates; adhesion should be confirmed on the actual substrate.
- Environmental profile: solvent-free, low odor, suitable for low-VOC formulations and free of isocyanates.
- Formulation: good storage stability; can be blended with other polymers.

Applications

1. Adhesives and sealants: base polymer for moisture-curing adhesives and sealants.
2. Elastic structural adhesives: formulations requiring elastic bonding and reliable adhesion.

3. Potting compounds: moisture-curing potting and encapsulation systems; electrical properties to be verified in the final formulation.
4. Coatings: flexible sealing coatings and protective coatings.
5. Market segments: bonding and sealing in construction, general industry and transportation; new energy applications are subject to testing.

Processing

Moisture sensitivity: Manta MS314 reacts with water and atmospheric moisture. Exclude moisture during storage and production to prevent premature hydrolysis and crosslinking.

Fillers: the MS314 content can be adjusted flexibly. It is compatible with most common fillers, including nano (precipitated) calcium carbonate, ground calcium carbonate, fumed silica, silica powder, diatomaceous earth and aluminum hydroxide.

Drying: dry fillers thoroughly before compounding. Vinyltrimethoxysilane (VTMO) is commonly used as a water scavenger.

Plasticizers: suitable plasticizers include phthalates (e.g., DINP, DIDP), polypropylene glycol (PPG) and other low-molecular-weight polyethers.

Additives: adhesion promoters, antioxidants, fungicides and light stabilizers can be added to adjust the end-use properties.

Packing

200 kg steel drum with aluminum-foil liner bag;

1,000 kg IBC (tote);

Other pack sizes available on request.

Shipped as ordinary chemical goods; refer to the SDS for transport information.

Safety and Storage

Store in the tightly closed original container in a cool, dry place, protected from direct sunlight. Shelf life: 12 months from the date of production when stored as recommended. For handling and disposal, follow standard chemical safety practice and the current Safety Data Sheet (SDS).

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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