MANTA

Technical Data Sheet

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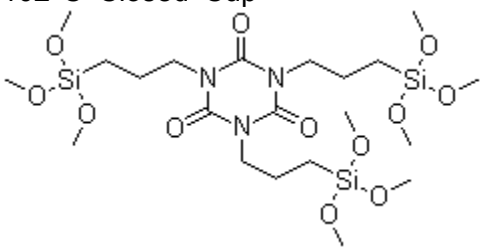
Manta S311

Isocyanurate Functional Alkoxy Silane

Description

Manta S311 is a high-molecular-weight adhesion promoter featuring a highly stable isocyanurate ring structure and dispersed trimethoxysilyl groups. Unlike highly basic aminosilanes or highly reactive isocyanates, Manta S311 offers a mild reactivity profile and very low volatility.
This advanced structural design allows formulators to significantly boost the adhesion of sealants and adhesives to difficult substrates without sacrificing the polymer's inherent elastomeric flexibility. It is especially critical for high-performance applications exposed to sustained elevated temperatures, such as hot melt adhesives (HMA).
Performance equivalent to Momentive Silquest A-Link 597 and Shin-Etsu KBM-9659.

Typical Physical Properties

Manta Code:	S311
Chemical Name:	1,3,5-tris[3-(trimethoxysilyl)propyl]isocyanurate
Synonyms:	Tris(3-trimethoxysilylpropyl)cyclotriisocyanurate; Tris[(trimethoxysilyl)propyl]isocyanurate;
CAS No. :	26115-70-8
EINECS No. :	247-465-8
Molecular Weight:	615.85
Appearance:	Colorless or yellowish transparent slightly viscous liquid
Purity (by GC, %):	93.0 min
Density (ρ20°C, g/cm³):	1.170～1.185
Refractive Index (n25/D):	
Boiling Point:	250°C
Flash Point:	102°C Closed Cup
Chemical Structure:	

Properties

1. Exceptional Thermal Stability: The robust isocyanurate ring structure maintains structural integrity at sustained temperatures up to 200°C, far exceeding the thermal limits of standard adhesion promoters.
2. Low Volatility: The high molecular weight and boiling point (250°C) ensure excellent silane retention during high-temperature compounding, virtually eliminating vaporization losses in hot melt applications.
3. Elastomer Preservation: Exhibits very low basicity. Unlike traditional aminosilanes that can over-crosslink and stiffen polymers, S311 greatly improves adhesion without embrittling or sacrificing the flexibility of the final sealant.
4. Superior Substrate Bonding: Provides reliable adhesion to difficult-to-bond substrates, including unprimed plastics, glass, aluminum, and steel.
5. Broad Compatibility: Highly compatible with a vast array of hot melt resins and moisture-curable

prepolymers.

Application

Manta S311 is specifically designed for severe-duty and high-temperature polymer systems:
1. High-Performance Hot Melt Adhesives (HMA): Acts as a silane adhesion promoter in reactive polyolefin (POR) and polyurethane hot melts (PUR), where processing temperatures demand extreme oxidative and thermal stability.
2. Advanced SPUR / MS Polymer Sealants: Serves as a critical additive in Silane Terminated Polyurethane (SPUR) and Silane-Modified Polymer prepolymer-based sealants. It clearly exhibits improved adhesion to difficult substrates without compromising the high-movement capabilities of the joint.
3. High-Temp Coatings: Utilized as a crosslinker and adhesion promoter in specialized industrial coatings exposed to extreme thermal cycling.

Packaging

In 20KG, 25kg iron pail, 200KG drum

Safety and Storage

Keep in a cool and dry place and avoid storage in direct sunlight. Shelf life is min. 12 months.

Contact Information

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