

Manta S311

Isocyanurate Functional Alkoxy Silane

Description

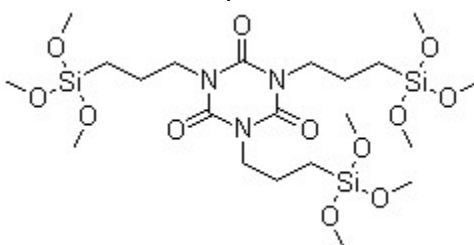
Manta S311 is a high-molecular-weight adhesion promoter featuring a highly stable isocyanurate ring structure and dispersed trimethoxysilyl groups. Unlike highly basic aminosilanes or highly reactive isocyanates, Manta S311 offers a uniquely mild reactivity profile and exceptionally low volatility. This 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).

It is the chemical equivalent to industry standards such as 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, %):	95.0 min
Specific Gravity ($\rho_{20^{\circ}\text{C}}$, g/cm ³)	1.170~1.185
Refractive Index ($n_{25/D}$):	
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 a uniquely 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:** Drives uncompromising adhesion to notoriously difficult 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 engineered for severe-duty and high-temperature polymer systems:

1. **High-Performance Hot Melt Adhesives (HMA):** Acts as the premier silane adhesion promoter in reactive polyolefin (POR) and polyurethane hot melts (PUR), where processing temperatures demand extreme oxidative and thermal stability.

Advanced SPUR / MS Polymer Sealants: Serves as a critical additive in Silane Terminated

2. **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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