New Silane Coupling Agent

Butadiene Polymer Modified Silane Coupling Agents X-12-1267B、X-12-1267B-ES

X-12-1267B is a silane coupling agent with a butadiene polymer structure.

Expected Properties

- Improves compatibility and adhesion of various materials
- Improves water resistance owing to high hydrophobicity

General Properties

Parameter \ Product name	X-12-1267B	X-12-1267B-ES
R	Me	Et
Appearance	Slightly cloudy yellow liquid	Slightly cloudy yellow liquid
Viscosity at 25℃ mPa・s	1,600	1,100
Nonvolatile content 105℃×3h %	>98	>98
Number average molecular mass*	6,000	6,200

* Calculated by styrene conversion (Not specified values)

Results of Comparative Adhesion Tests

■ Addition to silicone sealants

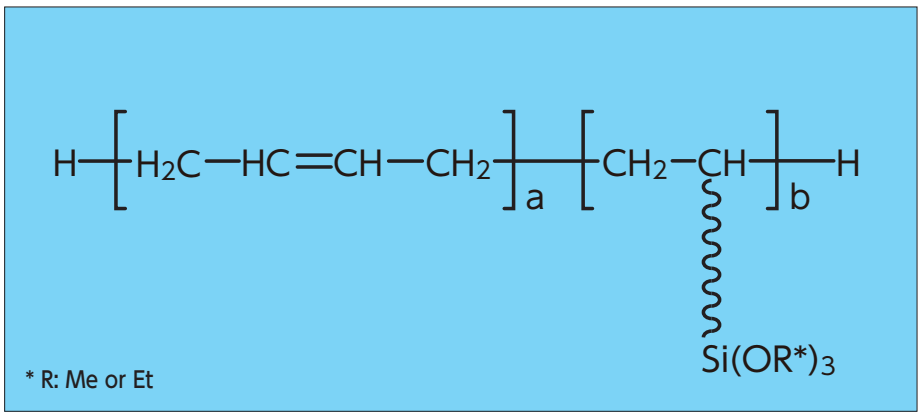
	Blank*1		Addition of 0.5 wt % X-12-1267B	
Substrate	Initial	After immersion*2	Initial	After immersion*2
Butyl rubber	–	+	+	+
Polystyrene	–	–	+	+

+ : Cohesive failure – : Interfacial delamination (Not specified values)

* 1 0.5 wt% of KBM-603: N-2-(Aminoethyl)-3-aminopropyltrimethoxysilane is contained.

* 2 50℃ immersion × 7 days

Chemical Structure



* R: Me or Et

Acid Anhydride Functional Group Containing Butadiene Polymer Modified Silane Coupling Agent X-12-1287A

Since X-12-1287A contains an acid anhydride group, it is reactive with organic materials and contributes to adhesion.

Expected Properties

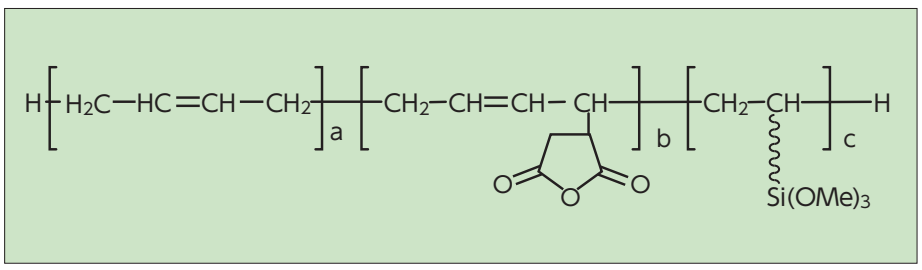
- Improves compatibility, adhesion, and hydrophobicity of various materials
- Improves adhesion with organic resin through the existence of the acid anhydride group

General Properties

Parameter \ Product name	X-12-1287A
Appearance	Cloudy brown liquid
Viscosity at 25℃ mPa・s	6,400
Nonvolatile content 105℃×3h %	>98.0
Number average molecular mass*	6,500
Acid anhydride equivalent g/mol	1,500

* Calculated by styrene conversion (Not specified values)

Chemical Structure



Styrene-butadiene Polymer Modified Silane Coupling Agent X-12-1281A、X-12-1281A-ES

X-12-1281A is a silane coupling agent with a styrene-butadiene polymer structure.

Expected Properties

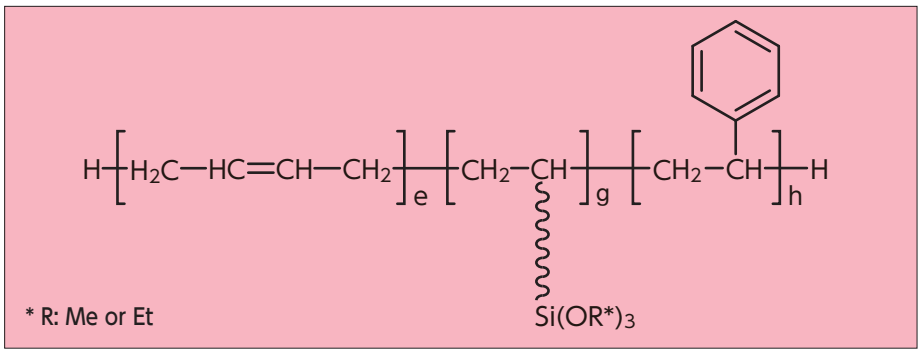
- Improved compatibility and adhesion of various materials
- Improved water resistance owing to high hydrophobicity

General Properties

Parameter \ Product name	X-12-1281A	X-12-1281A-ES
R	Me	Et
Appearance	Yellow slightly cloudy liquid	Yellow slightly cloudy liquid
Viscosity at 25℃ mPa・s	21,000	7,500
Nonvolatile content 105℃×3h %	>98	>98
Number average molecular mass*	9,000	9,500

* Calculated by styrene conversion (Not specified values)

Chemical Structure



* R: Me or Et