Vinyl Silane Additive

DANQUINSA GMBH

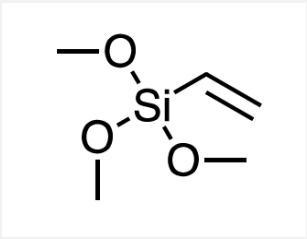
DANADD® VS-148

DESCRIPTION

Organofunctional silanes as DANADD® VS-148 can be used as an adhesion promoter, coupling agent or crosslinking agent.

DANADD® VS-148 offers vinyl and silane functionalities, making them suitable for crosslinking organic polymers. The resulting Si-O-Si crosslink sites are highly resistant to exposure to moisture, chemicals and UV. Siloxane crosslinks tend to not generate colour and are resistant to environmental factors, such as acid rain. DANADD® VS-148 may also be useful as a moisture scavenger in moisture cure systems where enhanced shelf-life is sought.

PRODUCT CHARACTERISTIC

	Values	Chemical Structure
Product Name	Vinyl trimethoxy silane	
CAS	2768-02-7	
Physical form	Colourless transparent liquid	
Purity (GC)	≥ 99%	
Specific Gravity (g/cm^3)	0,965 – 0,975	
Refractive Index	1,3910 – 1,3930	
Water Dispersion	Qualified	
Molecular weight (g/mol)	148,23	

APPLICATION

With the addition of an adhesion promoting DANADD® VS-148, excellent adhesion to a wide array of substrates can be obtained. This approach may be suitable to warm applied hot melt adhesive and sealant applications.

Pretreatment of glass, metals or ceramic surfaces with DANADD® VS-148 will improve adhesion of adhesives/ coatings and improve corrosion resistance.

Crosslinking with DANADD® VS-148 are monomeric vinyl functional silanes in vinyl, vinyl acrylic and acrylic resins. The vinyl silanes can be added as monomers during emulsion polymerisation to form silane modified latexes. The silanes in such latexes function as crosslinkers, forming very stable Si-O-Si linkages. Vinyl silanes can also be grafted to select unsaturated polymers such as polyethylene, polyester, and styrene-butadiene co-polymers, via free radical chemistry. Once grafted to the resin, the resin exhibits silane functionality through which the resin can be crosslinked via an ambient moisture cure mechanism. This approach can be utilized to provide improved high temperature resistance, tensile and tear strengths to thermoplastic resin-based materials.

KEY FEATURES AND BENEFITS

Vinyl Functionality

- Allows increased free radical addition to polymers.
- Increases the rate of silane hydrolysis.

Trimethoxy Silane Functionality

- Bonds to inorganic substrates to provide excellent wet and dry adhesion.
- Functions as a crosslinker.
- Useful as a moisture scavenger.

MOISTURE SCAVENGING

The electron withdrawing effect imparted by the silanes vinyl functionality enhances the rate of hydrolysis. This increased reactivity makes DANADD® VS-148 one of the fastest hydrolysing alkoxy silanes available. The elevated rate of hydrolysis is sufficient to enable DANADD® VS-148 to be utilised as a moisture scavenging agent in moisture sensitive systems. DANADD® VS-148 can be incorporated into urethane, silylated polyurethane (SPUR prepolymer) or other silane modified polymer-based sealants and adhesives to extend the systems shelf-life.

STORAGE AND VALIDITY

DANADD® VS-148 is to be stored in a dry environment. Keep containers closed when not in use. Avoid exposure to heat and direct sunlight. Validity of the product: 24 months from the date of manufacture in the closed original packaging.

PACKAGING

190 kg/200 L PE Drum or 950 kg/IBC.

Smaller packaging upon request.

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STAND 04/2023