

Dynasytan® SIVO 250

Methacryloxyfunctional, reactive silane system, methoxy functional

Technical data

Properties and test methods	Value	Unit	Method
Density (20 °C)	approx. 1.04	g/cm ³	DIN 51757
Refractive index n(20,D)	approx. 1.432	-	DIN 51423
Viscosity (20 °C)	approx. 2.8/2.7	mPa's / cSt	DIN 53015
Boiling point (1013 hPa)	approx. 255	°C	DIN 51356
Flash point	approx. 110	°C	DIN 51758

Registrations

Dynasytan® SIVO 250

EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes
DSL/NDSL (Canada):	Yes
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECSC (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes

Dynasytan® SIVO 250 is a methacryloxyfunctional silane that can be used as adhesion promoter, surface modifier, co-monomer for polymer synthesis and crosslinker.

Dynasytan® SIVO 250 is a clear, colorless liquid. It is soluble in alcohols, and aliphatic or aromatic hydrocarbons.

Methacrylate-functionalized silanes like Dynasytan® SIVO 250 are an excellent solution for the chemical bonding of the EVA-based encapsulant films to front glass and the polycrystalline silicon solar cells layer of photovoltaic modules. Dynasytan® SIVO 250 can be grafted onto the EVA polymer chain, by easily compounding with the EVA granules and other additives within the production process of the EVA encapsulation films. By the production of the solar panel, after the lamination step of the encapsulation film, Dynasytan® SIVO 250 acts as adhesion promoter between the inorganic glass layer and the silicone solar cells layer, enhancing the electrical properties and water vapor transmission of the module.

Dynasytan® SIVO 250 can be used as monomer during resin synthesis (e.g. latex dispersions). It may partially replace other reactive monomers like acryl or methacryl-functional monomers (usually 0.5-3 %, but sometimes up to 20%). The thus incorporated silane functionality can lead to improved properties in the final application (e.g. coating or sealant) of such resins:

- wet adhesion strength
- chemical resistance
- mar resistance

Reactivity

The alkoxy group of Dynasylan® SIVO 250 hydrolyzes in the presence of moisture (and a suitable catalyst such as acetic acid) to produce methanol and reactive silanol (Si-OH) groups which can bond to a variety of inorganic substrates. The methacryl groups can take place as a co-monomer in a radical polymerisation or interacts with the polymer. Examples of suitable inorganic substrates are glass, polycrystalline silicon, glass fibers, glass wool, mineral wool, silicic acid, quartz, sand, cristobalite, wollastonite and mica; also suitable are aluminium hydroxide, kaolin, talc, other silicate fillers, metal oxides, aluminium, stainless steel and other metals.

Examples of suitable polymers include unsaturated polyester, acrylates and vinyl esters.

Properties and application

Dynasylan® SIVO 250 is used as adhesion promoter in application such as:

- as an additive for filled and unfilled peroxide-crosslinked elastomers (EVA)
- as a surface modifier for pigments and fillers for thermosets (unsaturated polyester, MMA), thermoplastics (polyesters and polyolefins) and elastomers
- as an additive for casting resins (unsaturated polyester, MMA)

For primer application:

Dynasylan® SIVO 250 is applied on inorganic substrate as a pretreatment by dipping, spraying, or coating. As adhesion promoter it may be added directly to the resin matrix (additive process). For pretreatment, the silane may be used

- neat
- dissolved in an organic solvent

For primer application please have a look at our technical information flyer "Dynasylan® Primers - Examples for the Formulation of Silane Primers for Paints and Coatings" at www.dynasylan.com.

Safety and handling

Before considering the use of Dynasylan® products please read its Safety Data sheet (SDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Safety Data Sheet is available after registration on our website www.dynasylan.com or upon request from your local representative, customer service or from Evonik Resource Efficiency GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

Packaging and storage

Dynasylan® SIVO 250 is supplied in 25 kg, 200 kg and 215 kg drums and 1.000 kg bulk containers.

In an unopened container Dynasylan® SIVO 250 has a shelf life of min. six months from delivery.

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