Product Information

Dynasylan® SIVO 214

proprietary composition of primary and secondary aminofunctional silanes

CAS NUMBER

919-30-2 & 13497-18-2

PRODUCT DESCRIPTION

Dynasylan® SIVO 214 is a blend of primary and secondary aminofunctional silanes.

The blend contains up to 80 wt% of 3-aminopropyl-triethoxysilane and up to 20% Bis-(triethoxysilylpropyl) amine. The blend posses silanes having reactive primary and secondray amino groups as well as hydrolyzable ethoxysilyl group. The dual nature of this reactivity allows Dynasylan® SIVO 214 to bind chemically to both inorganic materials (e.g. glass, metals and fillers) and organic polymers (e.g. thermosets, thermoplastics, elastomers) thus functioning as an adhesion promoter, a surface modifier and a reactive reagent.

Dynasylan® SIVO 214 is a yellowish liquid with an amine-like odor. It is soluble in alcohols as well as aliphatic or aromatic hydrocarbons.

Typical Properties

Property	Unit	Value
Density (20 °C) DIN 51757	g/cm³	~0.95
Flash Point, min. DIN EN ISO 2719	°C	98
Viscosity (20 °C) DIN 53015	mPa·s	~2

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® SIVO 214 may be used as a constituent of aqueous sizes, neat, or added to a resin or polymer as a modifier.

Examples are:

- glass fiber/glass fabric composites: as a finish or size constituent
- mineral fiber insulating materials and abrasives: as an additive to phenolic resin binders
- foundry resins: as an additive to phenolic, furanic and melaminic resins
- sealants and adhesives: as a primer or additive and for chemical modification
- mineral-filled polymers or HFFR cables: for pretreatment of fillers and pigments
- paints and coatings: as an additive and primer for improving adhesion to the substrate.
- as a primer for glass and metal surfaces.

Dynasylan® SIVO 214 may react with a variety of inorganic substrates and modify their surfaces. Examples of suitable inorganic substrates are glass, glass fibers, glass wool, mineral wool, silicic acid, quartz, cristobalite, wollastonite, mica as well as aluminum trihydrate, magnesium dihydrate, kaolin, talc, other silicate fillers, metal oxides and metals.

Dynasylan® SIVO 214 may react with a variety of organic resins and polymers and form silane-functionalized materials. Examples of suitable organic resins and polymers are epoxy, phenolic, furanic and melaminic resins, polyurethanes, PA, PBT, PC, EVA, modified PP, PVB, PVAC, PVC, PS, polyester, acrylates and silicones.

Dynasylan® SIVO 214 can undergo reactions with ketone or ester solvents. Silane or silanized substrates can react with carbon dioxide to form the corresponding carbonates and/or carbamates.

Addition reactions with suitable monomeric or polymeric compounds (e.g. isocyanates, epoxides, etc.) are established and state of the art.

BENEFITS & ADVANTAGES

The most important product properties which can be improved by the use of Dynasylan® SIVO 214 are:

- adhesion at the interphase between organic and inorganic materials
- mechanical properties, for example flexural strength, tensile strength, impact strength and modulus of elasticity
- moisture and corrosion resistance
- electrical properties like dielectric constants or volume resistivity.

The most important processing properties which can be improved by the use of Dynasylan® SIVO 214 are:

- filler dispersion
- filler loading
- rheological behavior like reduction of viscosity.

DOSAGE

For substrate pretreatments, for example as a primer (as an approximately 0.5-2 percent solution), Dynasylan® SIVO 214 can advantageously be employed in organic solvents, such as alcohols, as constituent of aqueous sizes or solutions, as pure substance or added to the polymer as an additive. In higher concentrations (1-5 wt.-%) chemical modification can be achieved by reaction with suitable functional monomers or polymers, for example those containing epoxy groups.

Dynasylan® SIVO 214 can be dissolved in water at pH 9 or pH 4-5 including an acid catalyst.

- For pH 9: 1.0 g Dynasylan® SIVO 214 is stirred in 99.0 g 0.2 % acetic acid.
- For pH 4-5: 1.0g Dynasylan® SIVO 214 is stirred in 99.0 g 0.4 % acetic acid.
- Upon stirring for 1 h, the clear hydrolysate is ready for use.

HANDLING & PROCESSING

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 on our website https://silanes.evonik.com/en or upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

PACKAGING

Dynasylan® SIVO 214 is supplied in 25 kg cans, 190 kg drums and 900 kg IBC's.

STORAGE

Local regulations have to be followed and applied.

From technical point of view a storage between 4°C and 40°C is beneficial.

The material is stable as long as not exposed to air or moisture.

SHELF LIFE

In original unopened containers Dynasylan® SIVO 214 has a shelf life of at least 12 months from delivery.

Registration Listings

Registry	Status
Canada (DSL)	Information on Request
China (IECSC)	Yes
European Union (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
South Korea (KECL)	Yes
Philippines (PICCS)	Yes
United States of America (TSCA)	Yes

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