Product information

Dynasylan® 1175

N-Vinylbenzyl-N´-aminoethyl-3-aminopropylpolysiloxane, hydrochloride, Silane concentration: 40% of active ingredient

Technical data

Properties and test methods	Value	Unit	Method
Viscosity (20 °C/68 °F)	15	mPa·s / cSt	DIN 53015
Density (20 °C/68 °F)	0.94	g/cm³	DIN 51757
Flash point	9/48	°C / °F	DIN 51755
pH-value (20 °C, 1:1 in H2O)	approx. 6-7		

Registrations

Dynasylan® 1175

EINECS/ELINCS (EU):	Yes
AICS (Australia):	No
DSL/NDSL (Canada):	*
PICCS (Philippines):	No
TSCA (USA):	Yes
IECS (P.R. China):	Yes
ENCS (Japan):	No
ECL (South Korea):	No
* = available on request	

Dynasylan® 1175 is a cationic polymeric aminofunctional silane possessing hydrolyzable inorganic methoxysilyl groups.

The dual nature of its reactivity allows **Dynasylan®** 1175 to bind chemically to both inorganic materials (e.g. glass, metals, fillers) and organic polymers (e.g. thermosets, thermoplastics, elastomers), thus functioning as an adhesion promoter and as a surface modifier.

Dynasylan® 1175 is a dark yellow to brown liquid. **Dynasylan®** 1175 contains 40% active ingredient and about 60% of methanol.

Dynasylan® 1175 is miscible with water, with hydrolysis occurring.

Safety and handling

Before considering the use of Dynasylan® products please read its Material Safety Data sheet (MSDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Material 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 Industries AG, Product Safety Department, E-MAIL sds-im@evonik.com.

Packaging and storage

Dynasylan® 1175 is supplied in 25 kg pails or in 170 kg drums. **Dynasylan®** 1175 should be stored in a cool, well-ventilated place protected from moisture. In the unopened container **Dynasylan®** 1175 has a shelf life of twelve months.

Properties and application

Dynasylan® 1175 can be used in many applications. Examples are:

- as a size constituent or finish for glass fiber/ glass fabric composites
- as a primer or additive for sealants and adhesives
- for the pretreatment of fillers and pigments for mineral-filled composites
- as a primer and/or additive for paints and varnishes to improve adhesion to the substrate

Important product effects that can be achieved through the use of **Dynasylan®** 1175 are:

- improved mechanical properties: e.g. flexural strength, tensile strength, impact toughness, modulus of elasticity
- improved electrical properties: e.g. dielectric constant, specific volume resistance

Dynasylan® 1175 may also be used to improve processing properties such as

- better polymer wetting
- elongated gelation time of resins
- immediate solubility in water

Reactivity

In the presence of water, the methoxy groups of **Dynasylan®** 1175 hydrolyze form reactive silanol groups which can bond to a variety of inorganic substrates. The organophilic cationic amino group of **Dynasylan®** 1175 can react with a suitable polymer. Because **Dynasylan®** 1175 possesses both an amino group and a reactive double bond it can react with amine-reactive polymers and also with free-radical reactive polymers. The cationic structure provides antistatic properties and, in many applications, particularly good wetting of the resin. In addition these characteristics lead to immediate solubility in water even at pH 7. Due to the elevated chloride content compared to standard aminosilanes it causes an increased gelation time of e.g. an epoxy resin. Therefore air is likely not to be entrapped in the resin.

Hydrolysis of **Dynasylan®** 1175 is preferably carried out in the presence of acetic acid (pH 3-4).

Examples of suitable inorganic substrates are glass, glass fibers, glass wool, mineral wool, silica, quartz, sand, cristobalite, wollastonite, and mica as well as aluminium hydroxide, kaolin, talc, other silicious fillers, metal oxides and metals.

Dynasylan® 1175 may be used with such polymers as epoxy, methacrylate and unsaturated polyester resins, polyurethanes, PA, PBT, PC, EVA, modified PP, PVB, PVAC and acrylics.

Processing

Dynasylan® 1175 may be used for *substrate pretreatment* as an approx. 0.2-2 wt.% solution in organic solvents or as a constituent of an aqueous size.

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