

Product Information

Dynasylan® 1189

N-(n-Butyl)-3-aminopropyltrimethoxysilane

PRODUCT DESCRIPTION

Dynasylan® 1189 is a bifunctional silane possessing a reactive secondary amine and hydrolyzable methoxysilyl groups.

The dual nature of its reactivity allows Dynasylan® 1189 to bind chemically to both inorganic materials (e.g. glass, metals, fillers) and organic polymers (e.g. thermosets, thermoplastics and elastomers) thus acting as an adhesion promoter or as a surface modifier, but it can be also used for the chemical modification of suitable prepolymers.

Dynasylan® 1189 is a colorless to slightly yellow to greenish liquid with a light amine-like odor which is, e.g. soluble in alcohols, and aliphatic or aromatic hydrocarbons.

Typical Properties

Property	Unit	Value
Appearance		colorless to slightly yellow/greenish liquid
Boiling Point, min. (1013 hPa) DIN 51751	°C	238
Chemical Name		N-(n-butyl)-3-aminopropyltrimethoxysilane
Density (20 °C) DIN 51757	g/cm ³	0.947-0.947
Odor		light amine-like
Viscosity (20 °C) DIN 53015	mPa·s	2.5-2.5

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® 1189 has many important applications.

Examples include:

- as a primer or an additive, and for the chemical modification of NCO-modified prepolymers in adhesives and sealants
- as a high flexible adhesion promoter in SMP-systems
- as an additive to phenolic, furan and melamine resins used in foundry resins
- for pretreatment of fillers and pigments used in mineral-filled polymers
- as a primer and an additive for improving the adhesion of paints and coatings to substrates
- as a size constituent or finish for glass fiber/glass fabric composites

BENEFITS & ADVANTAGES

The most important product effects that can be achieved with Dynasylan® 1189 are:

- increased flexural strength, tensile strength, impact strength and modulus of elasticity
- improved moisture and corrosion resistance

Dynasylan® 1189 can also provide improvements in processing properties, such as

- filler dispersion thus getting higher filler loading
- rheological effects like reduction of mass viscosities

DOSAGE

In the presence of water, the methoxy groups of Dynasylan® 1189 hydrolyze to form reactive silanol groups which can bond to a variety of inorganic substrates. Examples of suitable inorganic substrates are glass, glass fibres, glass wool, wollastonite and kaolin. Most suitable polymers for Dynasylan® 1189 include epoxy, polyurethanes, PA, PBT, EVA, modified PP, SMP and silicones.

In particular, Dynasylan® 1189 is a very effective coupling agent for thermoplastics. Superior mechanical properties

can be achieved in reinforced MAA-modified PE or polypropylene matrices as well as polyamide. Dynasylan® 1189 especially leads to improvement of the impact strength of polyamide. Dynasylan® 1189 treated fibers and fillers deliver superior performance over standard aminosilanes in challenging environments. Dynasylan® 1189 can be used as an endcapper for polyurethanes (isocyanato prepolymer).

The hydrolysis of Dynasylan® 1189 in water takes place by acid catalysis (e.g. acetic acid at pH=3). To achieve solubility in organic solvents, 2-4 wt.-% of water per wt.-% of Dynasylan® 1189 should be added. After stirring for 5 hours the solutions are 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 upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

PACKAGING

Dynasylan® 1189 is supplied in 25 kg pails, 190 kg drums and 800 kg containers.

SHELF LIFE

In the unopened container Dynasylan® 1189 has a shelf life of min. 12 months from delivery.

Registration Listings

Registry	Status
Australia (AIIC)	No
Canada (DSL)	Information on Request
China (IECSC)	Yes
EU (REACH)	Yes
EU (EINECS/ELINCS)	Yes
Japan (ENCS)	Information on Request
South Korea (KECL)	Yes
Philippines (PICCS)	No
USA (TSCA)	Yes

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