

Product Information

Dynasylan® AMMO

Aminopropyltrimethoxysilan, 3-

CAS NUMBER

13822-56-5

PRODUCT DESCRIPTION

Dynasylan® AMMO is a bifunctional organosilane possessing a reactive primary amine and hydrolyzable inorganic methoxysilyl groups.

The dual nature of its reactivity allows Dynasylan® AMMO to bind chemically to both inorganic materials (e.g. glass, metals fillers) and organic polymers (e.g. thermosets, thermoplastics and elastomers), thus functioning as an adhesion promoter and a surface modifier. Dynasylan® AMMO is a clear, colorless liquid having an amine-like odor that soluble in alcohols and aliphatic and aromatic hydrocarbons.

Typical Properties

Property	Unit	Value
Boiling Point, min. (1013 hPa) DIN 51751	°C	194
Chemical Name		3-Aminopropyltrimethoxysilane
Density (20 °C) DIN 51757	g/cm ³	1.02-1.02
Flash Point, min. EN 22719	°C	90
Refractive Index (20,D) DIN 51423		1.425
Viscosity (20 °C) DIN 53015	mPa·s	2-2

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® AMMO is an important additive in many applications.

Examples include:

- glass fiber/glass fabric composites: as a size ingredient or finish
- glass and metal primers
- foundry resins: as an additive to cold-curing phenolic and furan resins
- sealants and adhesives: as a primer or additive and for chemical modification
- mineral-filled composites: for pretreatment of fillers and pigments
- paints and coatings: as an additive and primer for improving adhesion to the substrate.

BENEFITS & ADVANTAGES

Important product effects that can be achieved using Dynasylan® AMMO are:

- better adhesion to a wide variety of substantial substrates
- improved mechanical properties, e.g. flexural, tensile strength and impact strengths, modulus of elasticity
- improved moisture and corrosion resistance
- improved electrical properties, e.g. dielectric constant, volume resistivity

Dynasylan® AMMO can also improve processing properties such as filler dispersion that often leads to a reduction in viscosity and increased filler loads.

DOSAGE

Dynasylan® AMMO can be used as an approx. 0.5-10 wt.% solution in an organic solvent or as a constituent of an aqueous size. It can also be used neat or can be added to the polymer as an additive. Chemical modification can be achieved by reaction of Dynasylan® AMMO with suitable functional monomers or polymers, e.g. those containing isocyanate or epoxy groups.

HANDLING & PROCESSING

In the presence of water, the methoxy groups of Dynasylan® AMMO hydrolyze to form reactive silanol groups that can bond to a variety of inorganic substrates. The organophilic amino group of Dynasylan® AMMO can react with a suitable polymer. Hydrolysis of Dynasylan® AMMO takes place autocatalytically; the pH of the hydrolysate is about 10-11.

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

Dynasylan® AMMO may be used with such polymers as epoxy, phenolic, furan and melamine resins, polyurethanes, PA, PBT, PC, EVA, modified PP, PVB, PVAC, PVC, acrylics and silicones. Dynasylan® AMMO can undergo reactions with ketone or ester solvents. The silanes or silanized substrates can react with carbon dioxide to form the corresponding carbonates or carbamates, respectively. Product modifications are possible through addition reactions with suitable monomeric or polymeric compounds (for example isocyanates, epoxides).

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® AMMO is supplied in 25, 200 kg drums and 1.000 kg IBC containers.

SHELF LIFE

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

Registration Listings

Registry	Status
Australia (AIIC)	Yes
Canada (DSL)	Yes
China (IECSC)	Yes
EU (REACH)	Yes
EU (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
South Korea (KECL)	Yes
Philippines (PICCS)	Yes
USA (TSCA)	Yes

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Evonik Operations GmbH

Smart Effects
Rodenbacher Chaussee 4
63457 Hanau
Germany
ask-se@evonik.com
ask-se-asia@evonik.com
ask-se-america@evonik.com
www.evonik.com/smarteffects