Dynasylan®

Product Information

Dynasylan® 1124

Bis(3-trimethoxysilylpropyl)amin, N,N-; C12H31NO6Si2

PRODUCT DESCRIPTION

Dynasylan® 1124 is a secondary aminofunctional methoxy-silane possessing two symmetric silicon atoms.

Dynasylan® 1124 acts as an adhesion promoter between inorganic materials (for example glass, metals and fillers) and organic polymers (thermosets, thermoplastics and elastomers), as a surface modifier and can be used, for the chemical modification of substances. Dynasylan® 1124 is a colourless to yellow liquid with an amine-like odor, which is, for example, soluble in alcohols, aliphatic or aromatic hydrocarbons.

Typical Properties

Property	Unit	Value
Boiling Point, min. (1013 hPa) ASTM D-1120	°C	288
Chemical Name		Bis(3-trimethoxysilylpropyl)amin, N,N-
Density (20 °C) DIN 51757	g/cm³	1.04
Freezing Point ISO 3841	°C	-38
Viscosity (20 °C) dynamic DIN 53015	mPa·s	6.5

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® 1124 is an important additive in many applications.

Examples are:

- adhesives and sealants: as primer or additive
- paints and coatings: as additive and primer for improving adhesion to the substrate
- metal primers
- mineral fiber insulating materials, abrasives: as additive to phenolic resin binders
- foundry resins: as additive to phenolic, furan and melamine resins
- mineral-filled composites: for pre-treatment of fillers and pigments

BENEFITS & ADVANTAGES

The most important effects which can be achieved using Dynasylan® 1124 are:

improvement in product properties, such as

- excellent primerless adhesion
- flexural strength, tensile strength, impact strength and modulus of elasticity
- moisture and corrosion resistance
- durability at high temperature and humidity

Moreover, improvement in processing properties, such as

- wet-out
- homogeneous distribution of inorganic fillers in polymer matrices
- higher filler loading
- rheological behaviour: reduction in viscosity, Newtonian behaviour

DOSAGE

Dynasylan® 1124 is a bifunctional organosilane possessing a reactive secondary amine where the silicon-functional methoxy-groups hydrolyze in the presence of water to form reactive silanols, which can be bonded to an inorganic

substrate. The organophilic amino group can interact with a suitable polymer.

Due to 6 hydrolyzable alkoxy substituents present in one molecule, Dynasylan® 1124 is exceptionally suitable to form highly crosslinked networks on and between substrates and in organic matrices. The hydrolysis of Dynasylan® 1124 in water takes place by acidic catalysis (e.g. formic or acetic acid at a pH of 2.0 - 3.0). In order to achieve primer solution in organic solvents simply add 2.0 - 4.0 wt.-% of water per wt.-% of Dynasylan® 1124. Upon stirring for 5h the solutions are ready for use. Examples of suitable polymers are epoxy resins, polyurethanes, phenolic resins, furan resins, melamine resins, PA, PBT, PC, EVA, modified PP, PVB, PVAC, PVC, acrylates and silicones.

The secondary amino group in Dynasylan® 1124 provides high basicity at somewhat lower reactivity compared to primary amino groups. This is of major advantage in adhesives and sealants where the silane is added to form e.g. silane capped urethane prepolymers.Exceptional crosslinking properties make Dynasylan® 1124 a preferred component in the silylation of inorganic filler surfaces and in corrosion-resistant primer systems for metal pretreatment.

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.

Processing:

Dynasylan® 1124 can advantageously be employed in organic solvents or added situ as a pure substance to the polymer. 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.

PACKAGING

Dynasylan® 1124 is supplied in a convenient small sized package 25 kg, 200 kg drums and 1.000 kg IBC container.

SHELF LIFE

In the unopened container Dynasylan® 1124 has a shelf life of min. 12 months from delivery.

Registration Listings	
Registry	**Status**
Australia (AIIC)	Yes
Canada (DSL)	Yes
Switzerland (ChemO)	Yes
China (IECSC)	Yes
EU (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
South Korea (KECL)	Yes
New Zealand (NZIoC)	Yes
Philippines (PICCS)	Yes
Türkiye (KKDIK)	Yes
Taiwan (TCSI)	Yes
USA (TSCA)	Yes

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