

Dynasylan® DAMO-T

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane

Technical data

Properties and test methods	Value	Unit	Method
Refractive index n (20,D)	approx. 1.444	-	DIN 51423
Flash point	approx. 90/194	°C/ °F	DIN 51423
Viscosity (25 °C/ 68 °F)	approx. 7/6.8	mPa·s / cSt	DIN 53015
Density (20 °C/ 68 °F)	approx. 1.03	g/cm ³	DIN 51757

Registrations

Dynasylan® DAMO-T

EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes
DSL/NDSL (Canada):	Yes
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECS (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes

Dynasylan® DAMO-T is a bifunctional organosilane possessing two reactive amino groups and hydrolyzable inorganic methoxysilyl groups.

The dual nature of its reactivity allows **Dynasylan®** DAMO-T 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 surface modifier.

Dynasylan® DAMO-T is a yellow liquid with an amine-like odor. It is soluble in alcohols, and aliphatic or aromatic hydrocarbons.

Safety and handling

Before considering the use of Dynasylan® and Protectosil® 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® DAMO-T is supplied in 25 kg and 200 kg drums and 950 kg containers. In the unopened container **Dynasylan®** DAMO-T has a shelf life of at least one year.

Properties and application

Dynasylan[®] DAMO-T is an important additive in applications such as:

- glass fibre/glass fabric composites: as a finish or size constituent
- glass and metal primers
- foundry resins: as an additive to various types of foundry resins
- sealants and adhesives: as a primer or additive
- mineral-filled polymers (composites): for pretreatment of fillers and pigments or as an additive
- paints and coatings: as an additive and/or primer for improving adhesion to the substrate.

The most important effects which can be achieved through the use of **Dynasylan**[®] DAMO-T are:

improved product properties, such as

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

improved in processing properties, such as

- adhesion

Reactivity

In the presence of water the methoxy groups of **Dynasylan**[®] DAMO-T hydrolyze to form reactive silanol groups which can bond to a variety of inorganic substrates. The organophilic diamino group of **Dynasylan**[®] DAMO-T can react with a suitable polymer.

The hydrolysis of **Dynasylan**[®] DAMO-T takes place autocatalytically. The pH value of the hydrolysate is about 10-11. For a longer stability of the hydrolysate a pH of 4 is recommended. Examples of suitable inorganic substrates are glass or glass fibers.

Dynasylan[®] DAMO-T may be used with such polymers as phenolic, furan resins, PA, PBT, PC, EVA, modified PP, PVAC, PVC, acrylates and silicones.

Dynasylan[®] DAMO-T can undergo reactions with ketone or ester solvents. The silane or silanized substrates can react with carbon dioxide to form the corresponding carbonates and/or carbamates.

Processing

For substrate pretreatments (e.g. as a primer) **Dynasylan**[®] DAMO-T may be used as an approximately 0.5-2 wt.-% solution in an organic solvent such as alcohol, as a constituent of aqueous sizes or solutions, neat, or added to the polymer as an additive (at higher concentration: 1-10 wt.-%).

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