

Dynasylan® DAMO

N-2-Aminoethyl-3-aminopropyltrimethoxysilane

Technical data

Properties and test methods	Value	Unit	Method
Density (20 °C)	approx. 1.03	g/cm ³	DIN 51757
Refractive index n(20,D)	approx. 1.447	-	DIN 51423
Viscosity (20 °C / 68 °F)	approx. 6	mPa.s	DIN 53015
Boiling point (20 hPa)	140	°C	DIN 51356
Flash point	approx. 136	°C	DIN 51758

Registrations

Dynasylan® DAMO

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

Dynasylan® DAMO is a diamino-functional silane which acts as an adhesion promoter between inorganic materials (for example glass, metals and fillers) and organic polymers (thermosets, thermoplastics and elastomers) and as a surface modifier.

Dynasylan® DAMO is a colourless to slightly yellowish liquid with an amine-like odour which is soluble in alcohols and aliphatic as well as 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 is supplied in 25 kg and 200 kg drums. In the originally closed drum **Dynasylan® DAMO** has a shelf life of at least 1 year.

Properties and application

Dynasylan® DAMO is an important ingredient in many applications.

Examples are:

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

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

improvement in product properties, such as

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

improvement in processing properties, such as

- adhesion

Reactivity

Dynasylan® DAMO is a bifunctional organic compound in which 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 diamino group can interact with a suitable polymer.

The hydrolysis of **Dynasylan®** DAMO takes place autocatalytically. The pH of the hydrolysate is about 10-11. For longer stability of the hydrolysate a pH of 4 is recommended. Examples of particularly suitable inorganic substrates are glass or glass fibres. Examples of suitable polymers are PA, PBT, PC, EVA, modified PP, PVAC, PVC, acrylates and silicones.

Dynasylan® DAMO can undergo reactions with ketones or esters as solvents. The silane or silanized substrates can react with carbon dioxide to form the corresponding carbonates resp. carbamates. Product modifications are possible through addition reactions with suitable monomeric or polymeric compounds (for example isocyanates, epoxides, etc.).

Processing

For substrate pretreatments, for example as a primer (as an approximately 0.5-10 percent solution), **Dynasylan®** DAMO can advantageously be employed in organic solvents, such as alcohols and constituent of aqueous sizes or solutions. It may also be used as a pure substance or added to the polymer as an additive.

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