

Dynasytan® 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

Dynasytan® DAMO

| | |
|----------------------|------------|
| EINECS/ELINCS (EU): | Yes |
| AICS (Australia): | Yes |
| DSL/NDL (Canada): | Yes |
| PICCS (Philippines): | Yes |
| TSCA (USA): | Yes |
| IECSC (P.R. China): | Yes |
| ENCS (Japan): | Yes |
| ECL (South Korea): | Yes |
| REACH (Europe) | Registered |

Dynasytan® 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.

Dynasytan® 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 Dynasytan® 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 after registration on our website www.dynasytan.com or upon request from your local representative, customer service or from Evonik Resource Efficiency GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

Packaging, storage and shelf life

Dynasytan® DAMO is supplied in 25 kg, 200 kg drums and 950 kg IBC containers.

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

Properties and applications

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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