

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® 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, 200 kg drums and 950 kg IBC containers. 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.

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. EVONIK DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, WHETHER EXPRESS OR IMPLIED, AND SHALL HAVE NO LIABILITY FOR, MERCHANTABILITY OF THE PRODUCT OR ITS FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE), OR OTHERWISE. EVONIK SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.

Europe/Middle-East/Africa/RoW

Evonik Industries AG

Inorganic Materials
Rodenbacher Chaussee 4
63457 Hanau-Wolfgang
Germany
PHONE +49 6181 59 13636
FAX +49 6181 59 13737
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik (SEA) Pte. Ltd.

Inorganic Materials
3 Internatioanl Business Park
#07-18, Nordic European Centre
Singapore 609927
PHONE +65 6809 6830
FAX +65 6809 6630
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik Taiwan Ltd.

Inorganic Materials
Artist Construction Bldg.
9F, No. 133
Min Sheng East Road, Sec 3
Taipei, 105 Taiwan, R.O.C.
Taiwan
PHONE +886 227 17 1242
FAX +886 227 17 2106
dynasytan@evonik.com
www.dynasytan.com

North America

Evonik Corporation

Inorganic Materials
P.O. Box 677
299 Jefferson Road
Parsippany, NJ 07054-0677
USA
PHONE (TOLL FREE) +1 800 237 67 45
PHONE +1 973 541 8513
FAX +1 973 541 8503
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik (Shanghai) Co. Ltd.

Inorganic Materials
55, Chungdong Road
Shanghai 201108
P.R. China
PHONE +86 21 6119 1053
FAX +86 21 6119 1075
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik Japan Co. Ltd

Inorganic Materials
12th Floor Monolith Building
2-3-1, Nishi-Shinjuku-ku
Tokyo 163-0912
Japan
PHONE +81 353 23 7300
FAX +81 353 23 7399
dynasytan@evonik.com
www.dynasytan.com

Latin America

Evonik Brasil Ltda.

Inorganic Materials
Alameda Campinas, 579
01404-000 São Paulo-SP
Brazil
PHONE +55 11 3146 4123
FAX +55 11 3146 4148
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik Korea Ltd.

Inorganic Materials
94, Galsan 1-dong
Bupyeong-gu
Incheon, 403-081
Korea
PHONE +82 32 510 2433
FAX +82 32 505 2510
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik India Pvt. Ltd.

Inorganic Materials
Krislon House
Saki Vihar Road, Anderi (E)
Mumbai - 400 072
India
PHONE +91 226 7238 800
FAX +91 226 7238 811
dynasytan@evonik.com
www.dynasytan.com