

Dynasytan® MEMO

3-Methacryloxypropyltrimethoxysilane

Technical data

Properties and test methods	Value	Unit	Method
Density (20 °C/ 68 °F)	approx. 1.04	g/cm ³	DIN 51757
Refractive index n(20,D)	approx. 1.432	-	DIN 51423
Viscosity (20 °C/ 68° F)	approx. 2.8/ 2.7	mPa's / cSt	DIN 53015
Boiling point (1013 hPa)	approx. 255	°C	DIN 51356
Flash point	approx. 110	°C	DIN 51758

Registrations

Dynasytan® MEMO

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
REACH (Europe)	Registered

Dynasytan® MEMO is a methacrylfunctional silane that can be used as adhesion promoter, surface modifier, co-monomer for polymer synthesis and crosslinker.

Dynasytan® MEMO is a clear, colorless liquid. It is soluble in alcohols, and aliphatic or 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® MEMO is supplied in 25 kg, 215 kg drums and 1.000 kg bulk containers.

In the unopened container Dynasytan® MEMO has a shelf life of min. 6 months from delivery.

Properties and applications

Dynasylan® MEMO is used as adhesion promoter in application such as:

- a constituent of glass fiber sizes (glass fiber fillers for unsaturated polyester resins and polyolefins)
- a finish for glass fabrics used in unsaturated polyester resins
- as a surface modifier for pigments and fillers for thermosets (unsaturated polyester, MMA), thermoplastics (polyesters and polyolefins) and elastomers
- as an additive for filled, peroxide-crosslinked elastomers
- as an additive for casting resins (unsaturated polyester, MMA)

Dynasylan® MEMO is either applied to the inorganic substrate as a pretreatment by dipping, spraying, or coating or it may be added directly to the resin matrix (additive process). For pretreatment, the silane may be used

- neat
- dissolved in an organic solvent
- dissolved in a mixture of organic solvent and water for partial hydrolysis
- completely hydrolyzed in aqueous solution.

To prepare an aqueous pretreatment solution, approx. 1-5 wt.% Dynasylan® MEMO is dissolved in water that has been adjusted to pH 3-4 with acetic acid. The solution will turn clear when the silane has fully hydrolyzed. The clear solution of Dynasylan® MEMO hydrolysate must be used within 1-2 days, if it turns cloudy again it may no longer be used. In the additive process, Dynasylan® MEMO is mixed with the resin or polymer before or together with the filler. A prerequisite for this method is compatibility of the silane with the resin since the silane must not react prematurely with the resin.

When used correctly Dynasylan® MEMO can achieve the following properties, for example in a highly-filled unsaturated resin system:

- optimum dispersion of the fillers/pigments
- reduction in settling of the fillers/pigments
- a reduction in viscosity and improved flow properties of the resin
- improved mechanical properties of the molded products
- improved resistance of the molded products to boiling water, acids and alkalis

Dynasylan® MEMO can be used as monomer during resin synthesis (e.g. latex dispersions). It may partially replace the methacryl-functional monomers (usually 0.5-3%, but sometimes up to 20%). The thus incorporated silane functionality can lead to improved properties in the final application (e.g. coating or sealant) of such resins:

- wet adhesion strength
- chemical resistance
- mar resistance

Reactivity

The alkoxy group of Dynasylan® MEMO hydrolyzes in the presence of water (and a suitable catalyst such as acetic acid) to produce methanol and reactive silanol (Si-OH) groups which can bond to a variety of inorganic substrates. The methacryl groups interact with the polymer. Examples of suitable inorganic substrates are glass, glass fibers, glass wool, mineral wool, silicic acid, quartz, sand, cristobalite, wollastonite and mica; also suitable are aluminium hydroxide, kaolin, talc, other silicate fillers, metal oxides and metals.

Examples of suitable polymers include unsaturated polyester, acrylates and vinyl esters.

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any 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. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.

Europe/Middle-East/Africa/RoW

Evonik Resource Efficiency GmbH

Business Line Silanes
Rodenbacher Chaussee 4
63457 Hanau-Wolfgang
Germany
PHONE +49 6181 59 13636
FAX +49 6181 59 713915
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik (SEA) Pte. Ltd.

Business Line Silanes
3 Internatioanl Business Park
#07-18, Nordic European Centre
Singapore 609927
PHONE +65 6809 6576
FAX +65 6809 6699
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik Japan Co. Ltd

Business Line Silanes
12th Floor Monolith Building
2-3-1, Nishi-Shinjuku-ku
Tokyo 163-0912
Japan
PHONE +81 353 23 7446
FAX +81 353 23 7397
dynasytan@evonik.com
www.dynasytan.com

North America

Evonik Corporation

Business Line Silanes
299 Jefferson Road
Parsippany, NJ 07054-0677
USA
PHONE (TOLL FREE) +1 800 237 67 45
PHONE +1 973 929 8513
FAX +1 973 929 8503
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik Specialty Chemicals (Shanghai) Co. Ltd.

Business Line Silanes
55, Chungdong Road
Xinzhuang Industry Park
Shanghai 201108
P.R. China
PHONE +86 21 61191-399
FAX +86 21 61191-648
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik India Pvt. Ltd.

Business Line Silanes
Krislon House
Saki Vihar Road, Anderi (E)
Mumbai - 400 072
India
PHONE +91 226 7238 809
FAX +91 226 7238 811
dynasytan@evonik.com
www.dynasytan.com

North America

Silbond Corporation

9901 Sand Creek Highway
Weston, MI 49289
USA
PHONE +1 517 436 9316
FAX +1 517 436 3148
dynasytan@evonik.com
www.dynasytan.com

Asia / Pacific

Evonik Korea Ltd.

Business Line Silanes
94, Galsan 1-dong
Bupyeong-gu
Incheon, 403-081
Korea
PHONE +82 2320 4773
FAX +82 2783 2520
dynasytan@evonik.com
www.dynasytan.com

Latin America

Evonik Brasil Ltda.

Business Line Silanes
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 Taiwan Ltd.

Business Line Silanes
Artist Construction Bldg.
9F, No. 133
Min Sheng East Road, Sec 3
Taipei, 105 Taiwan, R.O.C.
Taiwan 10596
PHONE +886 227 17 1242
FAX +886 227 17 2106
dynasytan@evonik.com
www.dynasytan.com