

# Dynasylan® PTMO

## Propyltrimethoxysilane

### Technical data

Properties and test methods	Value	Unit	Method
Density (20 °C)	approx. 0.94	g/cm <sup>3</sup>	DIN 51757
Viscosity (20 °C)	approx. 0.7	mPa·s	DIN 53015
Flash point	approx. 35	°C	DIN 51755
Initial boiling point	approx. 137	°C	DIN 51751

### Registrations

#### Dynasylan® PTMO

EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes
DSL/NDSL (Canada):	Yes / No
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECS (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes
REACH (Europe)	Registered

Dynasylan® PTMO, an alkyltrialkoxysilane is important component in sol-gel systems.

Dynasylan® PTMO is a colourless, low-viscosity liquid. Dynasylan® PTMO is regarded as trifunctional since all three alkoxy groups can hydrolyze. Dynasylan® PTMO also contains a propyl group that adds hydrophobic character to sol-gel coatings. Hydrolysis leads to silanol groups which, in a subsequent condensation reaction, form very stable siloxane bonds (-Si-O-Si-). Condensation occurs parallel to hydrolysis once a certain amount of silanol groups have been formed. The absolute and relative rates of hydrolysis and condensation depend on a number of factors. The most important factors include pH, concentration, solvent, temperature and the catalyst.

### Safety and handling

Before considering the use of Dynasylan® 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.dynasylan.com](http://www.dynasylan.com) or upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL [sds-hu@evonik.com](mailto:sds-hu@evonik.com).

### Packaging, storage and shelf life

Dynasylan® PTMO is sold in 25 kg and 180 kg drums.

Dynasylan® PTMO must be stored with exclusion of moisture.

In a sealed container, the product has a shelf-life of 12 months with no loss of quality.

## Properties and applications

In some sol-gel applications Dynasylan® PTMO is partially hydrolyzed to form a preproduct that can be further crosslinked using temperature. This pre-hydrolysis often is done in conjunction with other organofunctional silanes (e.g. Dynasylan® GLYMO), silicic acid esters or even an aqueous silica sol. This pre-product can be further modified by addition of organic resins or inorganic nanoparticles such as AEROSIL®.

It is also possible to construct an inorganic/organic network by adding silanes containing organofunctional groups (e.g. aminopropyl groups) and organic resins. The mixture is then cured using standard organic methods. In this way it is possible to obtain more resistant coatings having a higher UV-stability than traditional organic coatings. This can also lead to more flame resistant materials than using traditional resins.

Dynasylan® PTMO reacts faster with water than Dynasylan® PTEO. To regulate the rate of hydrolysis and condensation a catalyst (mineral acids or ammonia, or even acetic acid and amines) can be added. Hydrolysis can also be furthered by adding a co-solvent such as an alcohol.

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****Evonik Operations GmbH**

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

**Asia / Pacific****Evonik (SEA) Pte. Ltd.**

Silanes Business Line  
3 Internatioanl Business Park  
#07-18, Nordic European  
Centre  
Singapore 609927  
PHONE +65 6809 6906  
FAX +65 6809 6699  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik Japan Co. Ltd**

Silanes Business Line  
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**

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

**Asia / Pacific****Evonik Specialty  
Chemicals (Shanghai) Co. Ltd.**

Silanes Business Line  
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.**

Silanes Business Line  
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 +1 732 981 5004  
FAX +1 732 981 5275  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik Korea Ltd.**

Silanes Business Line  
3F (Nongshim Sungmookwan  
B/D)  
112 Yeouidaebang-Ro  
Dongjak-Gu  
Seoul, 07057  
Korea  
PHONE +82 2320 4773  
FAX +82 2783 2520  
dynasytan@evonik.com  
www.dynasytan.com

**Region Central and South America****Evonik Brasil Ltda.**

Silanes Business Line  
Rua Arquiteto Olavo Redig de Campos,  
105  
Torre A - 04711-904 São Paulo- SP  
Brazil  
PHONE +55 11 3146 9627  
dynasytan@evonik.com  
www.dynasytan.com

**Asia / Pacific****Evonik Taiwan Ltd.**

Silanes Business Line  
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 #247  
FAX +886 227 17 2106  
dynasytan@evonik.com  
www.dynasytan.com