Product Information

Dynasylan® PTMO

Propyltrimethoxysilane

CAS NUMBER

confidential

PRODUCT DESCRIPTION

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 methoxy 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.

Typical Properties

Property	Unit	Value
Boiling Point, min. DIN 51751 (1.013 hPa)	°C	137
Chemical Name		n-propyltrimethoxysilane
Density (20 °C) DIN 51757	g/cm³	0.94
Flash Point, min. DIN EN ISO 13736	°C	35
Viscosity (20 °C) DIN 53015	mPa·s	0.7

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

In some sol-gel applications Dynasylan® PTMO is partially hydrolyzed to form a preproduct that can be further cross-linked 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®.

BENEFITS & ADVANTAGES

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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 mar resistant coatings having a higher UV-stability than traditional organic coatings. This can also lead to more flame resistant materials than using traditional resins.

HANDLING & PROCESSING

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.

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 on our website https://silanes.evonik.com/en or upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

PACKAGING

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

STORAGE

Dynasylan® PTMO must be stored with exclusion of moisture.

SHELF LIFE

In a sealed container, Dynasylan® PTMO has a shelf-life of 12 months with no loss of quality.

Registration Listings	
Registry	**Status**
Australia (AIIC)	Yes
Canada (DSL)	Yes
China (IECSC)	Yes
EU (REACH)	Yes
European Union (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
South Korea (KECL)	Yes
New Zealand (NZIoC)	Yes
Philippines (PICCS)	Yes
Türkiye (KKDIK)	Yes
Taiwan (TCSI)	Yes
United States of America (TSCA)	Yes

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