

## Product Information

# Dynasylan® PTEO

## Propyltriethoxysilane

### CAS NUMBER

2550-02-9

### PRODUCT DESCRIPTION

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

Dynasylan® PTEO is a colourless, low-viscosity liquid. Dynasylan® PTEO is regarded as trifunctional since all three alkoxy groups can hydrolyze. Additionally Dynasylan® PTEO contains a propyl group that adds a hydrophobic character to the 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
<b>Boiling Point, min.</b> DIN 51751	°C	178
<b>Chemical Name</b>		n-propyltriethoxysilane
<b>Density</b> (20 °C) DIN 51757	g/cm <sup>3</sup>	0.89
<b>Flash Point, min.</b> DIN 51755	°C	57

The data represents typical values (no product specification)

### TYPICAL APPLICATIONS

In some sol-gel applications Dynasylan® PTEO 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, silicic acid esters or even an aqueous silica sol. This pre-product

can be modified even further by addition of organic resins or inorganic nanoparticles such as AEROSIL®. This can also lead to more flame resistant materials than using traditional resins. Dynasylan® PTEO reacts slower with water than Dynasylan® PTMO and often a hydrolysis catalyst (mineral acids or ammonia, or even acetic acid and amines) must be added to hydrolyze at appreciable rates. Hydrolysis can also be furthered by adding a cosolvent such as ethanol.

### BENEFITS & ADVANTAGES

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.

### HANDLING & PROCESSING

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](mailto:sds-hu@evonik.com).

### PACKAGING

Dynasylan® PTEO is sold in plastic lined 25 kg and 180 kg steel drums.

### STORAGE

Dynasylan® PTEO must be stored with exclusion of moisture.

### SHELF LIFE

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

#### Registration Listings

Registry	Status
Australia (AIC)	Yes
Canada (DSL)	Information on Request
China (IECSC)	Yes
EU (REACH)	Yes
European Union (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes

#### Registration Listings

Registry	Status
South Korea (KECL)	No
Philippines (PICCS)	Yes
Taiwan (TCSI)	Yes
United States of America (TSCA)	Yes

#### Disclaimer

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third-party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

#### Evonik Operations GmbH

Smart Effects  
Rodenbacher Chaussee 4  
63457 Hanau  
Germany  
ask-se@evonik.com  
ask-se-asia@evonik.com  
ask-se-america@evonik.com  
[www.evonik.com/smarteffects](http://www.evonik.com/smarteffects)