Product Information

Dynasylan® MTES

Methyltriethoxysilane

PRODUCT DESCRIPTION

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

Dynasylan® MTES is a colorless, low-viscosity liquid. Use requires acid- or alkali-catalysed hydrolysis. Dynasylan® MTES is regarded as trifunctional since all three alkoxy groups are able to participate in this reaction. Additionally Dynasylan® MTES contains a methyl group that adds organic character to the products. 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 depends on a number of factors. The most important factors include pH, concentration, solvent, temperature and the catalyst.

Typical Properties

Property	Unit	Value
Appearance		colorless
Boiling Point, min. (1.043 hPa) DIN 51751	°C	142
Chemical Name		Methyltriethoxysilane
Density (20 °C) DIN 51757	g/cm³	0.89
Flash Point, min. DIN EN ISO 13736	°C	30
Freezing Point	°C	-40
Viscosity (20 °C) dynamic DIN 53015	mPa·s	0.6

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® MTES reacts slower with water than Dynasylan® MTMS. For rapid hydrolyzation a hydrolysis catalyst (mineral acids or ammonia, or even acetic acid and amines) or a cosolvent such as ethanol can be added.

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

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 and polymerizing using standard organic methods. This principle makes it 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

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® MTES are available in 25 kg, 180 kg and 900 kg drums/ containers.

STORAGE

Dynasylan® MTES must be stored with exclusion of moisture.

SHELF LIFE

In a sealed container, Dynasylan® MTES has a shelf life of min. 12 months from delivery.

Registration Listings	
Registry	**Status**
Australia (AIIC)	Yes
Canada (DSL)	Yes
China (IECSC)	Yes
EU (REACH)	Yes

Registration Listings	
Registry	**Status**
EU (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
South Korea (KECL)	Yes
Philippines (PICCS)	Yes
USA (TSCA)	Yes

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