

Dynasytan® 9896

Oligomeric short-chain alkylfunctional silane

Technical data

Properties and test methods	Value	Unit	Method
Flash point	63-90	°C	DIN EN ISO 2719
pH	3-4	-	500 g/l water, 20 °C
Density (20 °C / 68 °F)	1,04	g/cm ³	DIN 51757
Viscosity, dynamic (20 °C / 68 °F)	< 60	mPa·s / cSt	DIN 53015

Registrations

Dynasytan® 9896

EINECS/ELINCS (EU):	Yes
AICS (Australia):	No
DSL (Canada):	*
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECSC (P.R. China):	*
ENCS (Japan):	Yes
KECI (South Korea):	Yes
REACH (Europe)	Exempted
* = information on request	

Dynasytan® 9896 is an oligomeric short-chain alkylfunctional silane.

Dynasytan® 9896 is a clear, colourless to slightly yellow liquid and soluble in common organic solvents (e.g. petroleum ether, toluene, alcohol). Because of its low volatility and viscosity Dynasytan® 9896 is an easy-to-handle additive.

During the hydrolysis reaction between water and Dynasytan® 9896 a certain amount of VOC (volatile organic compound) is released as ethanol. From an environmental standpoint it should be noted that the amount of released hydrolysis ethanol (VOC) is significantly reduced compared to monomeric alkyl silanes and is below 100 g/l.

The high boiling point of Dynasytan® 9896, together with its high flash point, gives outstanding advantages with respect to safety and handling during processing.

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® 9896 is supplied in 25 kg pails, 200 kg polyethylene lined steel drums and 950 kg non-returnable IBC totes (net weight).

The containers must remain tightly sealed and stored in a cool, well-ventilated place protected against moisture.

In the unopened container Dynasytan® 9896 has a shelf life of min. 12 months from delivery.

Properties and applications

Dynasylan® 9896 silane can be used as a surface modifier to generate hydrophobicity (e.g. on inorganic pigments, mineral fillers). The short-chain alkyl functionality results in unique compound properties when Dynasylan® 9896 treated minerals or pigments are incorporated into polymers, e.g. polyethylene or polypropylene. Loading levels of 0.5 to 1.5 weight-% Dynasylan® 9896 based on the weight of filler or pigment are typically recommended. Dynasylan® 9896 is excellent as a dispersion and hydrophobation agent in mineral filled compounds. Dynasylan® 9896 forms covalent bonds to the inorganic and will not deplete in the final compound as it will happen to silicone oils used as surface modifiers. So Dynasylan® 9896 enables the printability of mineral filled plastics. In the presence of moisture, a low pH is created, the ethoxy groups of Dynasylan® 9896 hydrolyse to produce ethanol and reactive silanol groups. These silanol groups react with the filler via silicon-oxygen bridges. Dynasylan® 9896 can be used in many other applications such as filler and pigment coatings, dispersions etc. Typical property improvements obtained by using Dynasylan® 9896 in filled polymers are:

- improved filler dispersion
- good processability
- significantly reduced water-uptake

Key Benefits

Because of its unique structure, Dynasylan® 9896 exhibits superior hydrophobicity on substrates and forms chemical bonds to substrates. Use of Dynasylan® 9896 silane results in:

- Particularly in non-polar media (e.g. polyolefins etc.). Dynasylan® 9896 treated inorganic substrates (e.g. titanium dioxide, ATH, or MDH) dispersion show excellent compatibility.
- Dynasylan® 9896 as all silanes forms covalent bonds and will not deplete in the final compound.
- Higher filler loadings are possible. Better compatibility results in lower viscosity compared to unmodified compounds.

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