

Product Information

Dynasylan® 6598

Reactive vinyl-alkyl siloxane oligomer, ethoxy functional

PRODUCT DESCRIPTION

Dynasylan® 6598 is an oligomeric siloxane containing vinyl, propyl and ethoxy groups.

Dynasylan® 6598 is a further development of Dynasylan® VTMOEO, vinyl-tris(2-methoxy-ethoxy)silane.

Dynasylan® 6598 is a colourless, nearly odorless low-viscosity liquid. Dynasylan® 6598 is an excellent silane compatibiliser between inorganic fillers (e.g. kaolin, MDH, ATH) and organic polymers (EPDM, EVA, PE). The application of Dynasylan® 6598 in mineral-filled and peroxide-crosslinked cable systems results in improved mechanical and electrical properties, especially upon exposure to moisture. The high boiling start of Dynasylan® 6598, together with its high flash point, gives it several advantages over monomeric silanes with respect to safety, handling and processing. From an environmental viewpoint it should be noted that the amount of released hydrolysis ethanol (VOC) is considerably less than for monomeric silanes.

Typical Properties

Property	Unit	Value
Density (20 °C) DIN 51757	g/cm ³	~1
Viscosity (20 °C) DIN 53015	mPa·s	3-7

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® 6598 is excellent as an adhesion promoter in mineral-filled, peroxide-crosslinked compounds. The silicon-functional ethoxy groups of Dynasylan® 6598 hydrolyse in the presence of moisture, which is usually present on the filler surface, forming active silanol groups. The condensation of these silanol groups with hydroxyl groups on the filler surface leads to a tight chemical bond between

Dynasylan® 6598 and the filler. The vinyl functional end of Dynasylan® 6598 can be coupled to the polymer in a further reaction that runs parallel to peroxide crosslinking.

The propyl groups of Dynasylan® 6598 are hydrophobic and result in markedly improved electrical properties of the filled compounds, especially after exposure to water.

A major field of application for mineral-filled compounds is the cable industry. EPDM and kaolin can be processed into cable compounds through the adhesion promoting and hydrophobic effects of Dynasylan® 6598. It can also be used in the manufacture of halogen-free, non-toxic, environmentally-friendly flame retardant compounds (HFFR) based on EVA or PE and ATH or MDH. In addition, Dynasylan® 6598 can be used in many other applications such as filler and pigment treatment, use in dispersions etc.

BENEFITS & ADVANTAGES

Typical property improvements obtained by using Dynasylan® 6598 in filled polymers are:

- improved filler dispersion
- increased hydrophobicity that results in improved electrical values (dielectric constant ϵ_r , electric dissipation factor $\tan \delta$, volume resistivity ρ_v) especially after exposure to water/ moisture
- increase in maximum filler loading
- excellent balance between tensile strength and elongation at break at a high level
- improved heat resistance
- improvement of creep behavior at increased temperature
- improved chemical resistance
- strongly reduced tendency to stress cracking
- higher impact strength
- higher abrasion resistance
- good processability

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 upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

PACKAGING

Dynasylan® 6598 is supplied in 25 kg, 200 kg drums and 900 kg IBC containers.

STORAGE

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

SHELF LIFE

In the unopened container the shelf life of Dynasylan® 6598 is min. 12 months from delivery.

Registration Listings

Registry	Status
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South Korea (KECL)	Yes
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USA (TSCA)	Yes
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Registration Listings

Registry	Status
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Australia (AIIC)	No
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Canada (DSL)	Information on Request
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China (IECSC)	Yes
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EU (REACH)	Exempted
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Japan (ENCS)	Yes
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