

Product Information

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Dynasylan®

Dynasylan® 6598

Reactive vinyl-alkyl siloxane oligomer, ethoxy functional

Description

As a global supplier of innovative silane solutions, Degussa has developed a new generation of vinyl functional silanes. One such product is **Dynasylan® 6598**, a further development of **Dynasylan® VTMOEO**, vinyl-tris(2-methoxy-ethoxy)silane.

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

Technical data

Property	Value	Unit	Method
Density (20 °C/ 68 °F)	approx. 1	g/cm ³	DIN 51757
Boiling point (1013 hPa)	> 255/ 491	°C / °F	ASTM D-1120
SiO ₂ -content	approx. 42	% w/w	AN-SAA 0754
Flash point	> 70/ >158	°C / °F	DIN 51758
Viscosity (20 °C/ 68 °F)	approx. 3-7	mPas / cSt	DIN 53015

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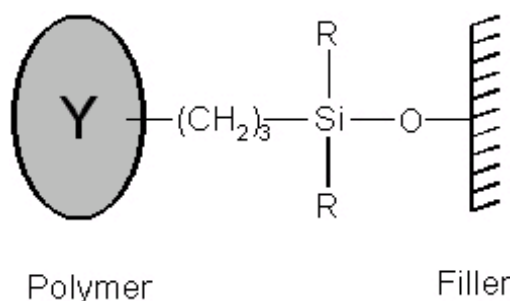

Dynasylan®

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 filled with 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.



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Typical property improvements obtained by using **Dynasytan® 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 D) especially after exposure to water**
- 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

Registration

EINECS/ELINCS (EU):	Yes
AICS (Australia):	No
DSL/NDSL (Canada):	Polymer
PICCS (Philippines):	No
TSCA (USA):	Yes
IECS (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes

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Safety and Handling

Before considering the use of any chemical read its Safety Data Sheet 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 <http://www.dynasytan.com> or upon request from your local Degussa representative.

Packaging and Storage

Dynasytan[®] 6598 is supplied in 25 kg and 200 kg drums. The containers must remain tightly sealed and stored in a cool, well-ventilated place protected against moisture. In the unopened container the shelf life of **Dynasytan**[®] 6598 is 12 months.

Dynasytan[®] 6598-EN-2006-01

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