AKTISIL VM 56

TECHNICAL DATA SHEET – Field of application: ELASTOMERS

1. Description

AKTISIL VM 56 is an activated SILLITIN Z 86, produced by modifying the surface with 3-Vinyltriethoxy silane. The by-products split off during the treatment reaction are largely removed during the production process which firmly attaches the silane to the filler surface. This helps minimize undesirable side effects, as they are potentially encountered with in-situ mixing (direct addition of silane to the compound).

During the vulcanization the vinyl groups of the **AKTISIL VM 56** react in the presence of radicals with the polymer.

Characteristics:

Appearance:	free-flowing powder
Brightness Y DIN 53 163:	81
Brightness Z DIN 53 163:	76
Volatile matter at 105 °C:	0.8 %
Density:	2.6 g/cm³
Particle size distribution	
d_{50} :	2.2 µm
d_{97} :	10.0 µm
Oil absorption:	45 g/100 g

Packaging:

Paper bags:	à 25 kg
PE bags:	≤ 25 kg
EVA bags:	≤ 20 kg
Big Bags:	550 – 900 kg
Bulk:	≤ 24 t

Shelf life:
At least 2 years if stored properly under dry conditions.

2. Applications

In elastomer applications **AKTISIL VM 56** can be used as a functional filler either on its own or in combination with other non-reinforcing or reinforcing fillers. The best effect is achieved in radical cured systems (peroxide, high-energy radiation).

It can be used whenever high tensile strength and high modulus, combined with low tensile and compression set, are as important as excellent processing and extrusion properties.

These properties are an ideal combination, in particular for pressure-less cured extruded products and sponge rubber.

Fields of application:

- pressure-less cured extruded products (profiles, hoses)
- cable sheaths and cable insulation
- sponge rubber products
- molded products and seals
- radiator hoses (peroxide cured)
- condenser seals

Methods of processing:
Any process commonly used in the rubber industry.

Elastomers:
Radical cured elastomers such as CM, CSM, EPM, EPDM, EVM, HNBR, pre-crosslinked IIR.

Metering:

EPM, EPDM:	50 - 250 phr
EVM:	50 - 250 phr
CM:	50 - 250 phr
HNBR:	30 - 150 phr
pre-crosslinked IIR:	50 - 150 phr

3. Benefits

The excellent properties of the base material SILLITIN Z 86 are retained:

- good, fast incorporation
- very good dispersion behavior
- good rheological properties
- excellent surfaces
- very good extrusion properties
- good heat conductivity
- no negative influence on curing rate
- low tensile and compression set
- high electric insulation resistance
- good aging properties
- high chemical resistance
- matting effect

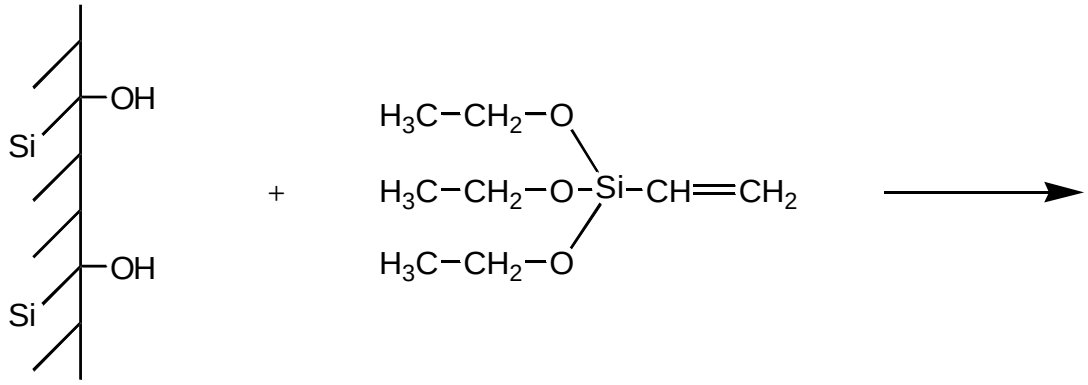
AKTISIL VM 56 also provides the following benefits compared with the base SILLITIN Z 86:

- increased tensile strength
- maximum tensile strength combined with a higher level of filling
- increase in modulus
- reduced tension and compression set
- reduced abrasion
- improved resistance to liquids
- electric insulation resistance remains high and constant after storage in water

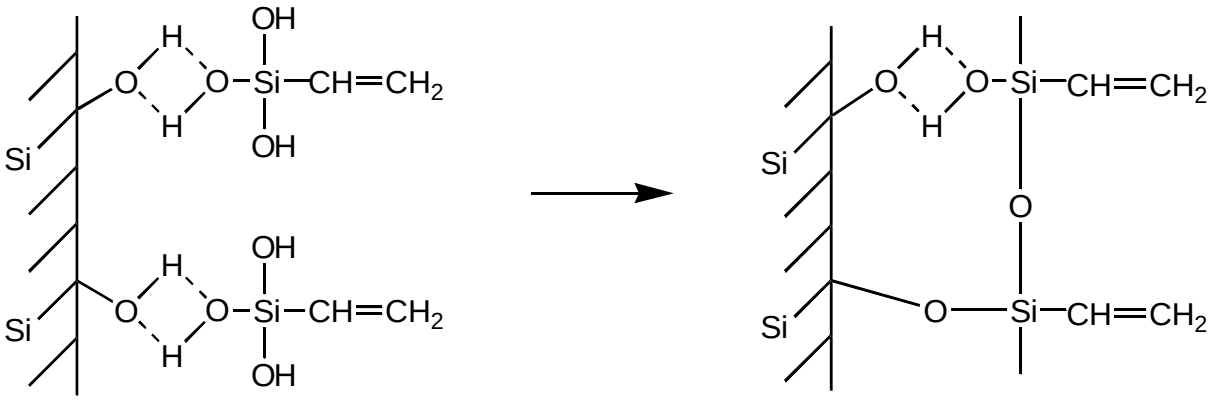
VM-5/5.08/Art.-No. 06577980

HOFFMANN MINERAL GmbH • P. O. Box 14 60 • D-86619 Neuburg (Donau) • Germany • Phone (+49-84 31) 53-0 • Fax (+49-84 31) 53-3 30
Internet: http:\\www.hoffmann-mineral.com • E-Mail: info@hoffmann-mineral.com

4. Reactions at HOFFMANN MINERAL (model)

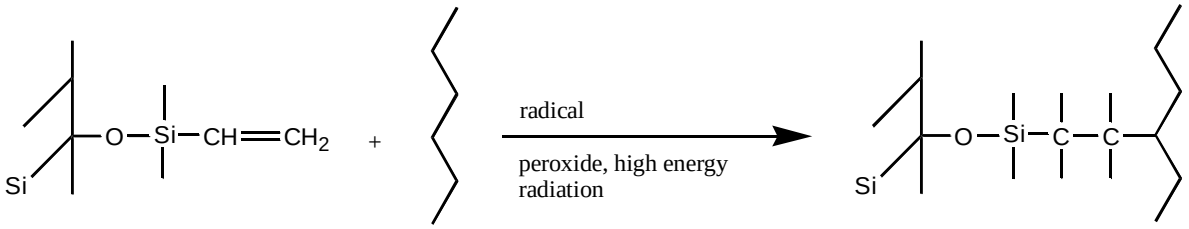


SILLITIN 3-Vinyltriethoxy silane



AKTISIL VM 56

5. Possible reaction during vulcanization at user's plant (model)



AKTISIL VM 56 rubber polymer