

## AKTISIL VM 56 / 89

Field of application: Elastomers

### 1. Description

AKTISIL VM 56 / 89 is an activated SILLITIN Z 89, produced by modifying the surface with a vinyl functional group. The by-products split off during the treatment reaction are largely removed during the production process which firmly attaches the functional group to the filler surface. This helps minimize undesirable side effects, as they are potentially encountered with in-situ mixing (direct addition of additive to the compound).

During the vulcanization the vinyl groups of the AKTISIL VM 56 / 89 react in the presence of radicals with the polymer.

### Characteristics

Appearance		free-flowing powder
Color CIELAB scale:	L*	96.0
	a*	0.2
	b*	3.7
Volatile matter at 105 °C		0.2 %
Density		2.6 g/cm <sup>3</sup>
Particle size distribution	D <sub>50</sub>	2 µm
	D <sub>97</sub>	9 µm
Surface area BET		7 m <sup>2</sup> /g
Oil absorption		45 g/100 g

### Packaging

Paper bags	á 25 kg
EVA bags	≤ 20 kg
Big Bags	550 - 900 kg

### Shelf life

3 years if stored properly under dry conditions.



## 2. Applications

In elastomer applications AKTISIL VM 56 / 89 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.

It is particularly suitable for white or very bright compounds

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

### 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

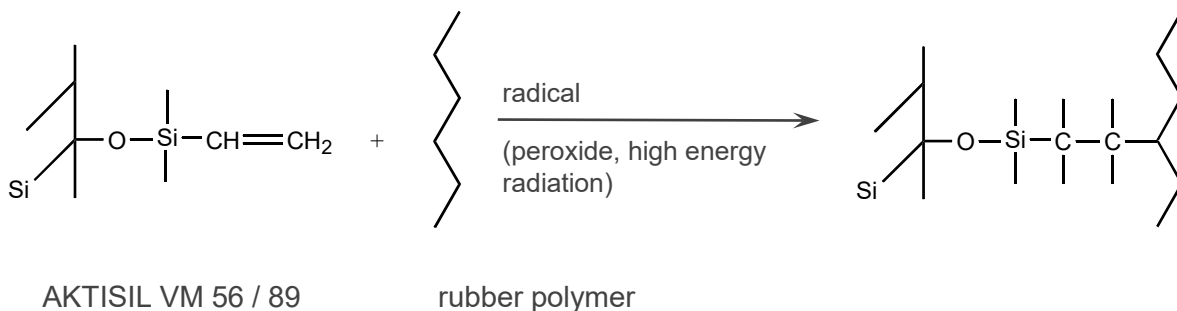
The excellent properties of the base material SILLITIN Z 89 are retained:

- good, fast incorporation
- very good dispersion behavior
- high filling ratio
- good rheological properties
- excellent surfaces
- very good extrusion properties
- high curing rate
- low tensile and compression set
- high electric insulation resistance
- good aging properties
- high chemical resistance
- matting effect

**AKTISIL VM 56 / 89 also provides the following benefits compared with the base SILLITIN Z 89:**

- 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

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



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