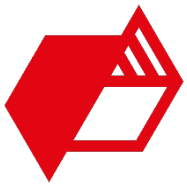


AKTISIL MM

Field of application: Elastomers

1. Description

AKTISIL MM is an activated SILLITIN Z 86, produced by modifying the surface with a mercapto 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 vulcanization the mercapto groups of the AKTISIL MM react in the presence of accelerators and sulfur or metal oxide, forming preferably monosulfide bonds with the polymer.

Characteristics

Appearance		free-flowing powder
Color CIELAB scale:	L* a* b*	93.8 1.1 10.3
Volatile matter at 105 °C		0.7 %
Densitiy		2.6 g/cm³
Particle size distribution	D_{50} D_{97}	2.0 µm 10.0 µm
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 MM can be used as a functional filler either on its own or in combination with other non-reinforcing or reinforcing fillers. In addition to curing systems based on sulfur and sulfur donors the optimum effect is achieved primarily with metal oxide curing systems.

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, particularly for pressure-less cured extruded products and sponge rubber.

With appropriate matching of the cure system bonds to the polymer are predominantly monosulfide. This makes AKTISIL MM particularly suitable for products with high aging and compression set requirements at high temperatures.

Fields of application

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

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

Elastomers:
NR, IR, BR, particularly CR, SBR, NBR, partly-hydrogenated HNBR, IIR, BIIR, CIIR; EPDM

Metering:

SBR:	50 - 250 phr
NBR:	50 - 250 phr
EPDM:	50 - 300 phr
NR:	50 - 200 phr

3. Benefits

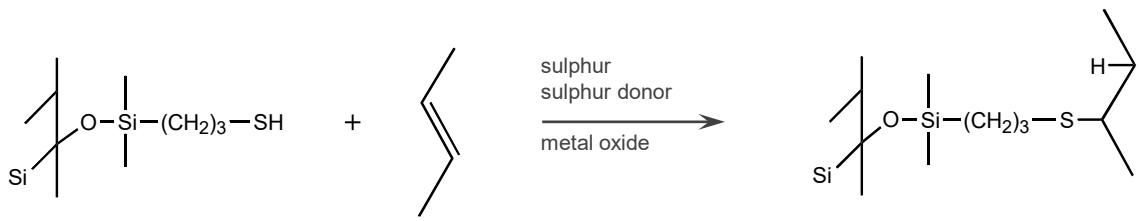
The excellent properties of the base material SILLITIN Z 86 are retained:

- 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 MM 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 tensile 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)



AKTISIL MM unsaturated polymer

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