AKTISIL AM

Field of application: Elastomers

1. Description

AKTISIL AM is an activated SILLITIN Z 86, produced by modifying the surface with an amino 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 amino groups of AKTISIL AM react in the presence of appropriate crosslinking agents with the polymer.

In processing thermoplastic polymers, AKTISIL AM in the presence of appropriate functional groups will give rise to high bond strength via hydrogen bonds.

Characteristics

Appearance		free-flowing powder
Color CIELAB scale:	L* a* b*	94.0 1.0 10.0
Residue > 40 µm		30 mg/kg
Volatile matter at 105 °C		0.3 %
Densitiy		2.6 g/cm³
Particle size distribution	D_{50} D_{97}	2.4 µm 12.0 µm
Oil absorption		60 g/100 g

Packaging

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

Shelf life

2 years if stored properly under dry conditions.

2. Applications

In elastomer applications AKTISIL AM can be used as a functional filler either on its own or in combination with other non-reinforcing or reinforcing fillers. An optimum effect will be obtained in polar elastomers in combination with sulfur or sulfur donor crosslinking systems, including the amine crosslinking of BIIR.

AKTISIL AM can also interact with the polar groups of polymers via hydrogen bonds in thermoplastic compounds, e. g. based on EVM (EVA). The product can also be used in the polyol component of elastomeric PU resp. TPU compounds as a mineral additive.

It can be used whenever high tensile strength and high modulus, combined with a very 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.

Information on compliance with certain regulations/recommendations and other safety-related aspects: Product safety information

Fields of application

- pressure-less cured extruded products (profiles, hoses)
- cable sheaths and cable insulation
- pharmaceutical stoppers
- molded products and seals
- roller coverings
- sponge rubber products

Elastomers:
CR, NBR, HNBR, IIR, BIIR, CIIR;
EVM, EVA, AEM;
CM, CSM, ACM, FKM, ECO, EPDM, U / PU / TPU

Dosage:

TPU:	approx. 5 % in polyol
all others:	50 - 300 phr

3. Benefits

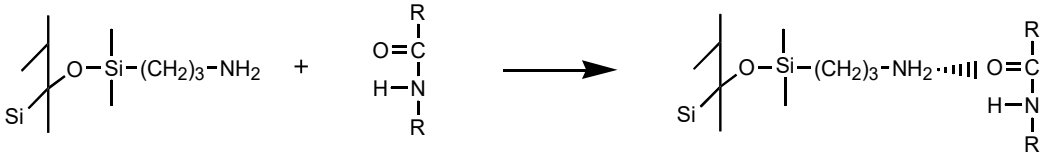
The excellent properties of the base material SILLITIN Z 86 are retained:

- 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

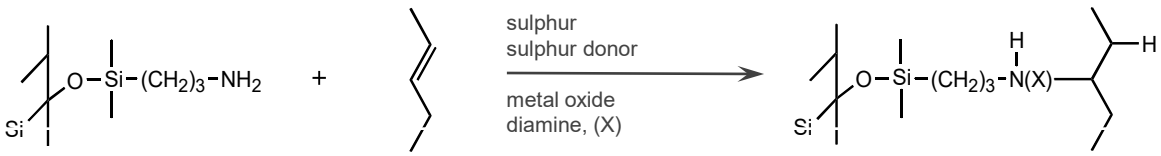
AKTISIL AM also provides the following benefits compared with the base SILLITIN Z 86:

- no negative effect on amine cure (BIIR)
- increased tensile strength
- maximum tensile strength combined with a higher level of filling
- increase in modulus
- reduced tension and compression set
- reduced abrasion loss
- improved resistance to liquids

4. Possible reaction at user‘s plant (model)



AKTISIL AM — polar functional group of polymer
i. e. amide, urethane or vinyl acetate group



AKTISIL AM — rubber polymer

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