AKTIFIT Q

Field of application: Elastomers

1. Description

AKTIFIT Q is an activated SILFIT Z 91, produced by modifying the surface with a methacrylic 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, which are potentially encountered with in-situ mixing (direct addition of additive to the compound).
A special process technology during the production of AKTIFIT Q provides high hydrophobicity as well as outstanding low moisture absorption even under very humid conditions. During the vulcanization the methacrylic groups of the AKTIFIT Q react in the presence of radicals with the polymer.

Characteristics

Appearance		free-flowing powder
Color CIELAB scale:	L* a* b*	96.2 - 0.1 1.0
Residue > 40 µm		20 mg/kg
Volatile matter at 105 °C		0.2 %
Densitiy		2.6 g/cm³
Particle size distribution	D_{50} D_{97}	2.3 µm 11.0 µm
Surface area BET		8 m²/g
Oil absorption		65 g/100 g
Equilibrium moisture content at 23 °C: 50 % relative humidity 80 % relative humidity 90 % relative humidity		 0.04 % 0.06 % 0.07 %

Packaging

Paper bags	á 25 kg
EVA bags	on demand
Big Bags	on demand

Shelf life

2 years if stored properly under dry conditions.

2. Applications

In elastomer applications AKTIFIT Q 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 reactivity, tensile strength and very high modulus, combined with low tensile and compression set, are as important as excellent processing and extrusion properties.

It is also suitable for very bright and white compounds.

These properties are an ideal combination, in particular 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
- sponge rubber products
- molded gaskets and seals
- condenser gaskets
- prevention of filler caused mold fouling during the injection process or deposits in the orifice die (plating) during extrusion

Elastomers:
radical curable elastomers such as CM, CSM, EPM, EPDM, EVM, Q, HNBR, FKM

Dosage:
generally in the range from 25 to 400 phr, depending on application, formulation and requirements

3. Benefits

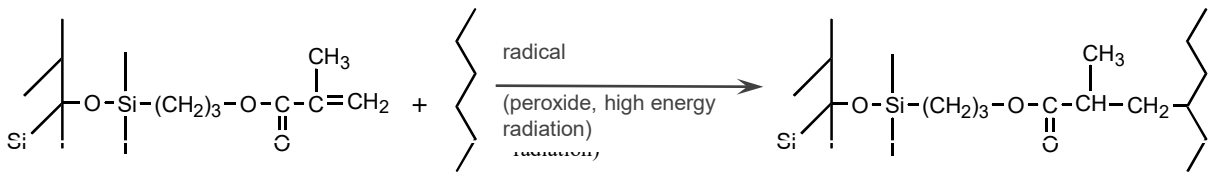
The excellent properties of the base material SILFIT Z 91 are retained:

- low sieve residues
- low moisture, low moisture absorption
- very high brightness
- very high color-neutrality
- good, fast incorporation
- excellent dispersion behavior, even in critical compounds
- good rheological properties
- excellent surfaces
- excellent extrusion properties
- no negative influence on curing rate
- low tensile and compression set
- high electrical resistance
- good aging properties
- high chemical resistance
- matting effect

AKTIFIT Q also provides the following benefits compared with the base SILFIT Z 91:

- highly hydrophobic filler
- outstandingly low moisture absorption under very humid conditions
- increased tensile strength
- maximum tensile strength at a higher filler loading
- increase of modulus
- reduced tensile and compression set
- improved abrasion resistance
- improved resistance to liquids
- electrical resistance remains high and constant during immersion in water

4. Possible reaction during vulcanization at users‘s plant (model)



AKTIFIT Q rubber polymer

5. Application examples

Plating

prevention of filler caused mold fouling during the injection process or deposits in the orifice die (plating) during extrusion (Aktifit Q represented by Silfit Z 91).
Technical report: “Die plating”

Generelly profiles and seals, gaskets and o-rings

based on radical cured polymers with lowest compression set and good resistances

All technical reports are available at our homepage www.hoffmann-mineral.com.

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