AKTIFIT Q

Field of application: Thermoplastics

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, as they are potentially encountered with in-situ mixing (direct addition of additive to the compound). A special process technology during production of AKTIFIT Q provides high hydrophobicity as well as outstanding low moisture absorption even under very humid conditions. During compounding, the hydrophobic methacrylic groups groups of AKTIFIT Q ensure good wetting and excellent dispersion in the matrix polymer. In addition, in polymers with suitable functional groups and presence of free radicals, i. e. peroxides, AKTIFIT Q can be covalently bonded into the polymeric matrix. In polar polymers the use of this grade leads to high composite strength via strong interaction.

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 thermoplastics AKTIFIT Q is used as a functional filler or anti-blocking additive. Optimum effects are achieved in thermoplastic polyesters, most frequently without any other filler or reinforcement.

AKTIFIT Q should be considered whenever low warpage, perfect surface finish and scratch resistance are as important as good melt flow, high strain at break and high impact strength.

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

Fields of application

- scratch and impact resistant trims, panels, claddings and housings
- films

Polymers:
- preferred PBT and PBT-blends, PET, PC and PC-blends
- basically also other thermoplastics and radically crosslinkable resins like PE and PE/EVA

Dosage:
- 500 to 1000 ppm as anti-blocking agent in BO-PET films
- 10 to 55 % (m/m) as functional filler, typical 20 % to 40 %

3. Benefits

In comparison with the unfilled polymer, the use of AKTIFIT Q will result in the following advantages:

- higher hardness
- improvement of scratch resistance
- higher stiffness (modulus)
- higher tensile and flex strength
- improved heat distortion temperature
- higher heat conductivity

In comparison with other mineral fillers, AKTIFIT Q offers the following advantages:

- very low sieve residues
- very low moisture
- outstandingly low moisture absorption even under very humid conditions
- pre-drying usually not required
- highly hydrophobic
- easy feeding and metering
- good wetting and dispersion properties
- high melt flow rates
- excellent surface finish
- improvement of scratch resistance
- no graying of black-colored compounds
- excellent high tensile strain at break
- excellent high impact strength, even at low temperature and black-colored compounds

More information about Aktifit Q in thermoplastics at www.hoffmann-mineral.com.

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