

## AKTISIL VM 56 / 89

Field of application: Paint & Varnish

### 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 curing (hardening) of the paint formulation, the vinyl groups of AKTISIL VM 56 / 89 react with the functional groups of the binder especially in the presence of radicals.

### Characteristics

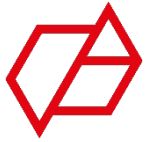
Appearance		free-flowing powder
Color CIELAB scale:	L*	96.0
	a*	0.2
	b*	3.7
Volatile matter at 105 °C		0.8 %
Density		2.6 g/cm <sup>3</sup>
Particle size distribution	D <sub>50</sub>	2 µm
	D <sub>97</sub>	9 µm
Oil absorption		45 g/100 g
Refractive index n		1.55

### 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 paint and varnish applications AKTISIL VM 56 / 89 can be used as a functional filler either on its own or combined with extenders or flattening agents. The best effect is achieved in binder systems which polymerize or cure due to a radically initiated reaction.

In particular these include:

- UV or electron-beam cured paints
- unsaturated polyester resins
- vinyl ester and acrylic resins
- other radically cured systems

It is also suitable for melamine and UF resins.

It can be used whenever optimum wettability, low yield point (including a high solids content) and very low sedimentation are just as important as high chemical resistance and high abrasion resistance.

In unpigmented coatings it achieves good transparency with a low yellow tinge.

## Fields of application

- UV-cured wood and foil coatings
- reactive adhesives
- sealing and embedding compounds
- stoving paints/enamels
- special emulsion paints
- anti-corrosive coatings

### **Minimum film thickness:**

> 10 µm, less in special cases

### **Dosage:**

Depending on the target, up to 50 % (m/m), PVC up to appr. 30 %



### 3. Benefits

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

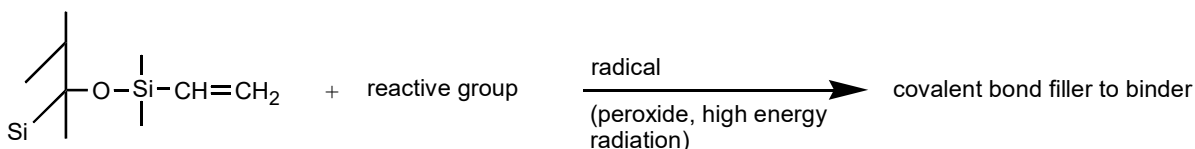
- high filling ratio
- outstanding dispersion behavior
- good pigment dispersion (spacer effect)
- low abrasiveness
- very low tendency to settle
- soft sediment
- good wet edge strength
- quick drying
- weathering resistance
- breathability
- scratch resistance
- high abrasion resistance
- good transparency
- slight flattening effect

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

- improved wettability even using binders with low polarity
- reduction of the yield point with high solids content
- increased tensile and bending strength as well as impact strength
- improved abrasion and scratch resistance
- increased resistance to chemicals and moisture
- minimal water absorption with high water vapor permeability

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

Vinyl polymers; (Meth-)acrylic polymers; UP resins



AKTISIL VM 56 / 89

a) unsaturated polymer  
b) monomer

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