# AKTISIL AM

## TECHNICAL DATA SHEET - Field of application: PAINT & VARNISH

### 1. Description

AKTISIL AM is an activated SILLITIN Z 86, produced by modifying the surface with amino silane. The by-products split off during the treatment reaction are largely removed during the production process which firmly attaches the silane to the filler surface. This helps minimize undesirable side effects, as they are potentially encountered with in-situ mixing (direct addition of silane to the compound).

During curing (hardening) of the paint formulation, the amino groups of AKTISIL AM react with appropriate functional groups of the binder or build a strong interaction in the form of hydrogen bridge linkage.

### Characteristics:

- **Appearance**: free-flowing powder
- **Brightness Y DIN 53 163**: 82
- **Brightness Z DIN 53 163**: 77
- **Volatil matter at 105 °C**: 0.2 %
- **Density**: 2.6 g/cm³
- **Particle size distribution**:
  - D₅₀: 2.2 μm
  - D₉₇: 10.0 μm
- **Sieve residue >40 μm**: 30 mg/kg
- **Oil absorption**: 45 g/100 g

### Packaging:

- **Paper bags**: à 25 kg
- **PE bags**: ≤ 25 kg
- **EVA bags**: ≤ 20 kg
- **Big Bags**: 550 - 900 kg

### Shelf life:

2 years if properly stored under dry conditions.

### 2. Applications

In paint and varnish applications AKTISIL AM can be used as a functional filler either on its own or combined with extenders or flatting agents. The best effect is achieved in binder systems which have functional groups with active hydrogen or which can react with. With inert, polar groups hydrogen bridge linkages can be built up. In particular these include:

- epoxy resins
- polyurethane resins
- acrylic resins
- alkyd resins
- polyester resins
- phenol, melamine and urea resins
- polysulfide systems
- all stoving paints/enamels

It can be used whenever optimum wettability, low yield point (including a high solids content) and a very low tendency to settle are just as important as excellent mechanical properties and high chemical and corrosion resistance.

### Fields of application:

- high-grade, reactive industrial paints
- reactive adhesives
- sealing and embedding compounds
- stoving paints/enamels incl. powder coatings
- anti-corrosive coatings
- OEM primer-surfacer, water dilutable, with high gloss and good stone chip resistance

**Minimum film thickness:** > 10 μm, less in special cases.

**Metering:**

up to 50 % depending on intended application.

### 3. Benefits

The excellent properties of the base material SILLITIN Z 86 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 flatting effect

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

- 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 resistance and scratch resistance
- increased resistance to chemicals and moisture
- improved anti-corrosive effect
- increase of gloss and stone chip resistance
4. Possible reactions at user's plant (model)

AKTISIL AM

- reactive group
  - covalent bond filler to binder

AKTISIL AM

- polar group
  - hydrogen bond filler to binder

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