

SILLIKOLLOID P 87 / SILLIKOLLOID P 87 puriss

TECHNICAL DATA SHEET – Field of application: ELASTOMERS

1. Description

SILLIKOLLOID P 87 and **SILLIKOLLOID P 87 puriss** is a natural combination of corpuscular, crypto-crystalline and amorphous silica and lamellar kaolinite. These two elements together form a loose structure which offers particular advantages in terms of application possibilities when used as a functional filler.

Characteristics:

Appearance: free-flowing powder
 Brightness Y DIN 53 163: 82
 Brightness Z DIN 53 163: 76
 Residue > 40 µm: 20 mg/kg
 Residue > 200 µm: 3 mg/kg
 Volatile matter
 at 105 °C: 0.5 %
 Density: 2.6 g/cm³
 Particle size distribution
 d₅₀: 1.5 µm
 d₉₇: 5.6 µm
 Surface area BET: 12 m²/g
 Oil absorption: 55 g/100 g

Puriss grade:

As a result of a sophisticated manufacturing process the very low sieving residue is reduced even further from the values given above to the following:

> 40 µm: 8 mg/kg
 > 200 µm: 1 mg/kg

In addition the good dispersion behavior is once more improved.

Packaging:

Paper bags* à 25 kg
 PE bags: ≤ 20 kg
 EVA bags: ≤ 15 kg
 Big Bags: 550 - 800 kg
 Bulk: ≤ 22 t

The puriss-grade* is available in paper bags of 20 kilos only.

Shelf life:

Unlimited if stored properly under dry conditions.

2. Applications

In elastomer applications **SILLIKOLLOID P 87** and **SILLIKOLLOID P 87 puriss** can be used as a functional filler either on its own or in combination with other non-reinforcing or reinforcing fillers.

Fields of application:

In general **SILLIKOLLOID P 87** is suitable for any rubber products used for technical applications.

Its particular properties are high tensile strength, high tear resistance and excellent extrusion properties.

Used in black profiles and hoses it has a slight matting effect.

It is equally suitable for black and colored compounds.

SILLIKOLLOID P 87 puriss also has advantages in the following instances:

- products with extremely thin walls (membranes)
- if surface quality requirements are very high (roller coverings and offset blankets)
- if dispersion requirements are very high (compounds with a high oil content or automotive profiles with very high surface defect rate)

Methods of processing:

Any process commonly used in the rubber industry.

Elastomers:

BIIR, BR, CIIR, CR, HNBR, IIR, IR, NBR, NR, PNR, SBR; CM, CSM, EPM, EPDM, EVM.

Metering:

EPM, EPDM: 50 - 400 phr
 NBR: 50 - 250 phr
 NR: 50 - 250 phr
 SBR: 50 - 250 phr

Comment:

In the case of high-filled peroxide cured compounds it may be beneficial to add glycol.

3. Benefits

- good, fast incorporation
- good dispersion behavior
- good rheological properties
- excellent surfaces
- excellent 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
- complies with the standards on basic foodstuffs of the BfR and FDA
- matting effect

Puriss also provides the following benefits compared with the base material **SILLIKOLLOID P 87**:

- extremely low sieving residue
- excellent dispersion behavior, even in critical compounds

Properties:

	V	N	Z	P
Viscosity	*	**	***	****
Tensile strength	*	**	***	****
Tear resistance	*	**	***	****
Compression set	*	**	***	****
Profile quality (Extrusion)	*	**	***	****
Matting effect (Extrusion)	****	***	**	*
Elasticity	****	***	**	*
Abrasion	****	***	**	*

* = low **** = high

4. Particle size distribution

The measurement method for these particle size distributions is based on the Fraunhofer diffraction spectrum. The analyses were carried out with Mastersizer S, a laser apparatus of Malvern.

Important: The data on particle size distribution is highly dependent upon the method used, test preparations and the measuring device itself. As a result the values given may not be directly comparable with those provided by another manufacturer. If you have any queries please contact us direct.

