SILLITIN Z 86 (PURISS)

Field of application: Elastomers

1. Description

SILLITIN Z 86 and SILLITIN Z 86 puriss is a natural combination of corpuscular 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
Color CIELAB scale:	L* a* b*	93.9 1.0 9.7
Residue > 40 µm		20 mg/kg
Volatile matter at 105 °C		0.5 %
Densitiy		2.6 g/cm³
Particle size distribution	D_{50} D_{97}	1.9 µm 9.0 µm
Surface area BET		13 m²/g
Oil absorption		55 g/100 g
Puriss grade: As a result of a sophisticated manufacturing process the very low residue is reduced even further from the values given above to the following: > 40 µm In addition the good dispersion behavior is once more improved.		8 mg/kg

Packaging

Paper bags	á 25 kg
EVA bags	≤ 20 kg
Big Bags	600 - 1000 kg
Bulk	≤ 22 t

The puriss-grade is available in paper bags of 25 kilos only.

Shelf life

Unlimited if stored properly under dry conditions.

2. Applications

In elastomer applications SILLITIN Z 86 and SILLITIN Z 86 puriss can be used as a functional filler either on its own or in combination with other non-reinforcing or reinforcing fillers.

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

Fields of application

In general **SILLITIN Z 86** is suitable for any rubber products used for technical applications.

Its particular properties are that it provides a balanced relationship between compression set, tensile strength, tear resistance and has very good extrusion properties.

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

It is suitable both for black and colored compounds.

SILLITIN Z 86 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 high-filled peroxide cured compounds it can be beneficial to add glycol.

3. Benefits

- good, fast incorporation
- very good dispersion behavior
- good rheological properties
- excellent surfaces
- very good 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 SILLITIN Z 86:
- extremely low sieving residue
- excellent dispersion behavior, even in critical compounds

Comparison of properties

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

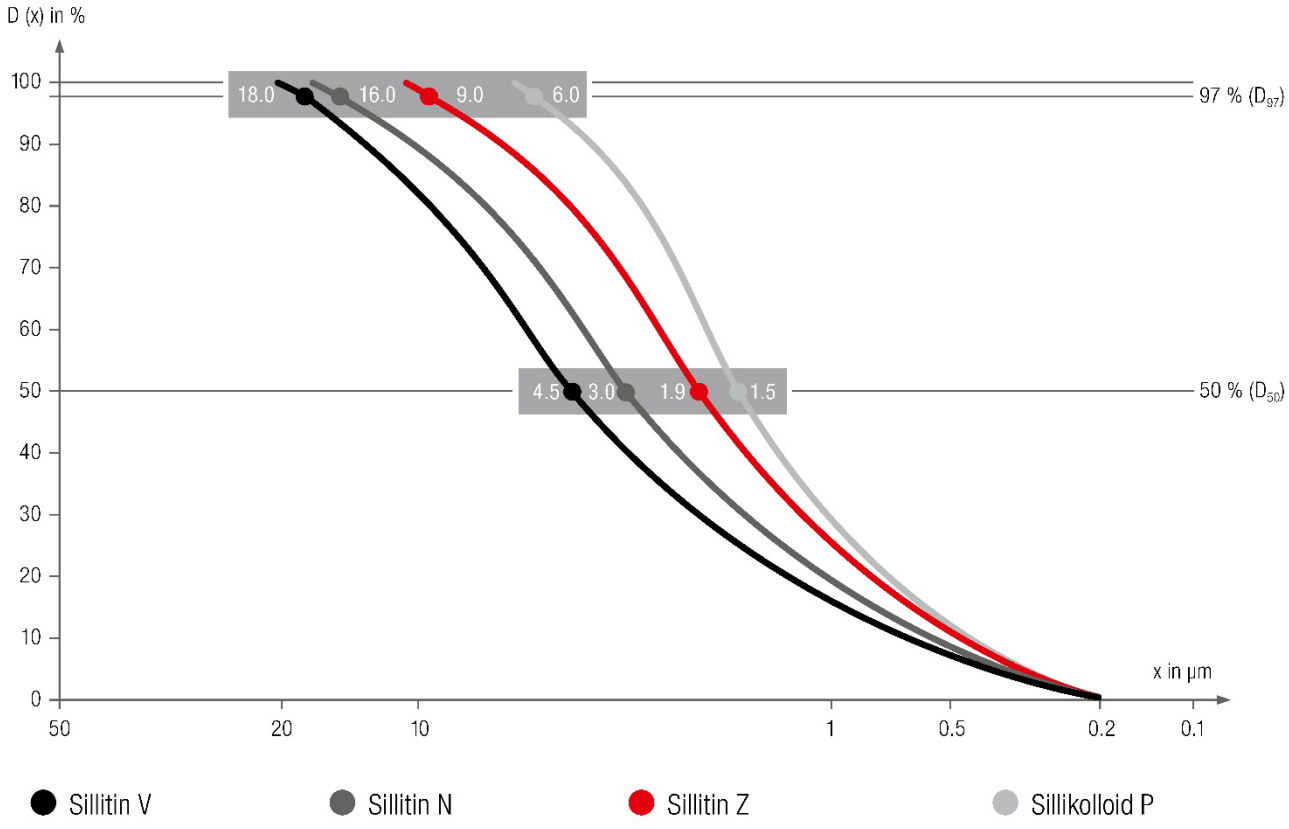
● = low ●●●● = high

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 3000, 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.



Our applications engineering advice and the information contained in this memorandum are based on experience and are made to the best of our knowledge and belief, they must be regarded however as non-binding advice without guarantee. Working and employment conditions over which we have no control exclude any damage claim arising from the use of our data and recommendations. Furthermore we cannot assume any responsibility for patent infringements, which might result from the use of our information.

Münchener Straße 75 • DE-86633 Neuburg (Donau)
Phone +49 8431 53-0 • info@hoffmann-mineral.com