

## SILLITIN Z 89 / SILLITIN Z 89 puriss

### TECHNICAL DATA – Field of application: PAINT & VARNISH

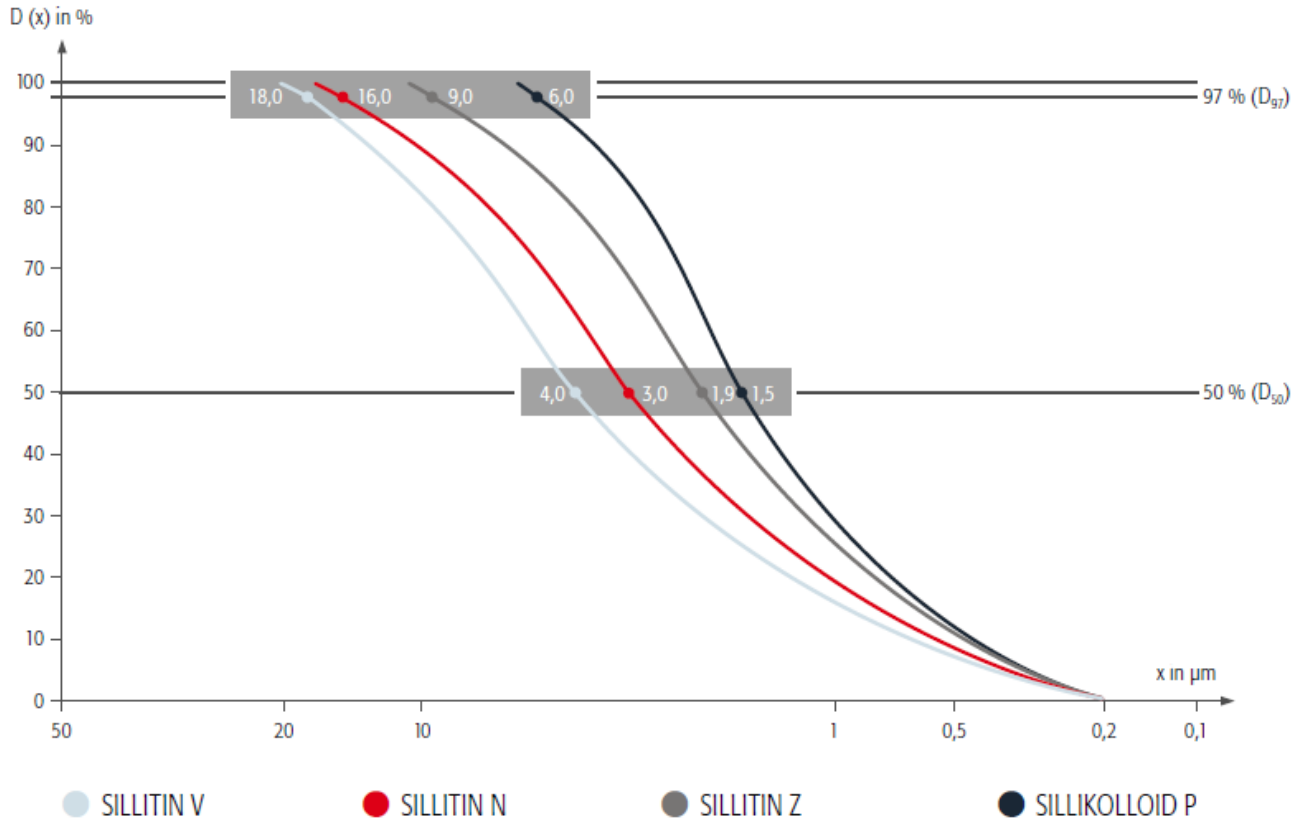
| <p><b>1. Description</b></p> <p><b>SILLITIN Z 89</b> and <b>SILLITIN Z 89 puriss</b> is a natural combination of corpuscular silica and lamellar kaolinite. These two elements together form a loose structure which offers particular advantages in terms of application possibilities when used as a functional filler.</p> <p><b>Characteristics:</b><br/>         Appearance: free-flowing powder<br/>         Brightness Y DIN 53 163: 86<br/>         Brightness Z DIN 53 163: 86<br/>         Residue &gt; 40 µm: 20 mg/kg<br/>         Residue &gt; 200 µm: 3 mg/kg<br/>         Volatile matter at 105 °C: 0.5 %<br/>         Electrical conductivity: 80 µS/cm<br/>         Density: 2.6 g/cm<sup>3</sup><br/>         Particle size distribution<br/>         D<sub>50</sub>: 1.9 µm<br/>         D<sub>97</sub>: 9.0 µm<br/>         Surface area BET: 10 m<sup>2</sup>/g<br/>         Oil absorption: 55 g/100 g<br/>         Refractive index n: 1.55</p> <p><b>Puriss grade:</b><br/>         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:<br/>         &gt; 40 µm: 8 mg/kg<br/>         &gt; 200 µm: 1 mg/kg<br/>         In addition the very good dispersion behavior is once more improved.</p> <p><b>Packaging: *</b><br/>         Paper bags: à 25 kg<br/>         PE bags: ≤ 20 kg<br/>         EVA bags: ≤ 15 kg<br/>         Big Bags: 550 - 900 kg<br/>         Bulk: ≤ 22 t</p> <p>*The puriss-grade is available in paper bags of 25 kg only.</p> <p><b>Shelf life:</b><br/>         Unlimited if properly stored under dry conditions.</p> | <p><b>2. Applications</b></p> <p>In paint and varnish applications <b>SILLITIN Z 89</b> and <b>SILLITIN Z 89 puriss</b> can be used as functional fillers either on their own or combined with extenders or flattening agents.</p> <p><b>Fields of application:</b></p> <ul style="list-style-type: none"> <li>emulsion and silicate paints (exterior and interior emulsion paints)</li> <li>industrial paints</li> <li>wood and foil coatings</li> <li>anti-corrosion coatings</li> <li>primers and fillers also for the automobile industry</li> <li>sealing and embedding compounds</li> <li>electrophoretic paints</li> </ul> <p>It stands out for its excellent dispersion properties, moderate yield point and pseudoplasticity with a high solids content and high abrasion resistance. In unpigmented coatings it achieves good transparency with a minimal yellow tinge.</p> <p><b>SILLITIN Z 89 puriss</b> also has advantages in the following instances:</p> <ul style="list-style-type: none"> <li>extremely high requirements on dispersion behavior (paint production without grinding)</li> <li>very low coating thickness</li> </ul> <p><b>Formulation principle:</b><br/>         solvent-based, solvent-free, water-based.</p> <p><b>Hardening principle:</b><br/>         all conventional reaction types, also UV-curing.</p> <p><b>Minimum film thickness:</b><br/>         &gt; 10 µm, less in special cases.</p> <p><b>Metering:</b><br/>         up to 50 % depending on intended application.</p> | <p><b>3. Benefits</b></p> <ul style="list-style-type: none"> <li>high filling ratio</li> <li>outstanding dispersion behavior</li> <li>good pigment dispersion (spacer effect)</li> <li>low abrasiveness</li> <li>very low tendency to settle</li> <li>soft sediment</li> <li>good wet edge strength</li> <li>quick drying</li> <li>weathering resistance</li> <li>breathability</li> <li>scratch resistance</li> <li>high abrasion resistance</li> <li>very good transparency</li> <li>slight flattening effect</li> <li>complies with the standards on basic foodstuffs of the BfR and FDA</li> </ul> <p><b>Puriss</b> also provides the following benefits compared with the base SILLITIN Z 89:</p> <ul style="list-style-type: none"> <li>extremely low sieving residues</li> <li>excellent dispersion behavior</li> </ul> <p><b>Properties:</b></p> <table border="1"> <thead> <tr> <th></th> <th>V</th> <th>N</th> <th>Z</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>Viscosity</td> <td>*</td> <td>**</td> <td>***</td> <td>****</td> </tr> <tr> <td>Yield point</td> <td>*</td> <td>**</td> <td>***</td> <td>****</td> </tr> <tr> <td>Sedimentation</td> <td>****</td> <td>***</td> <td>**</td> <td>*</td> </tr> <tr> <td>Flattening</td> <td>****</td> <td>***</td> <td>**</td> <td>*</td> </tr> </tbody> </table> <p style="text-align: center;">* = low      **** = high</p> |     | V    | N | Z | P | Viscosity | * | ** | *** | **** | Yield point | * | ** | *** | **** | Sedimentation | **** | *** | ** | * | Flattening | **** | *** | ** | * |
|---|---|--|-----|------|---|---|---|-----------|---|----|-----|------|-------------|---|----|-----|------|---------------|------|-----|----|---|------------|------|-----|----|---|
|   | V   | N  | Z   | P    |   |   |   |           |   |    |     |      |             |   |    |     |      |               |      |     |    |   |            |      |     |    |   |
| Viscosity   | *   | **   | *** | **** |   |   |   |           |   |    |     |      |             |   |    |     |      |               |      |     |    |   |            |      |     |    |   |
| Yield point   | *   | **   | *** | **** |   |   |   |           |   |    |     |      |             |   |    |     |      |               |      |     |    |   |            |      |     |    |   |
| Sedimentation   | ****  | ***  | **  | *    |   |   |   |           |   |    |     |      |             |   |    |     |      |               |      |     |    |   |            |      |     |    |   |
| Flattening  | ****  | ***  | **  | *    |   |   |   |           |   |    |     |      |             |   |    |     |      |               |      |     |    |   |            |      |     |    |   |

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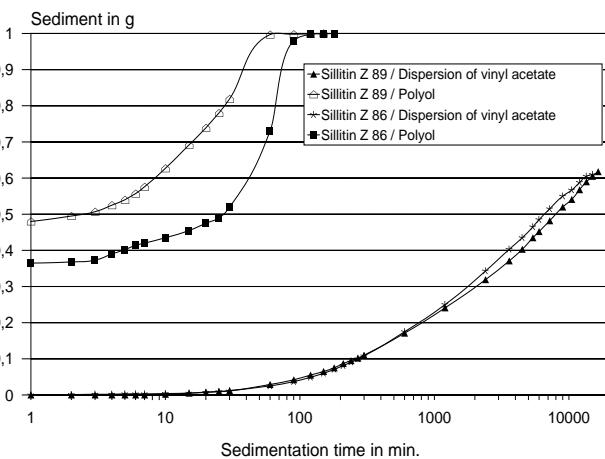
## 4. Particle size distribution

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.

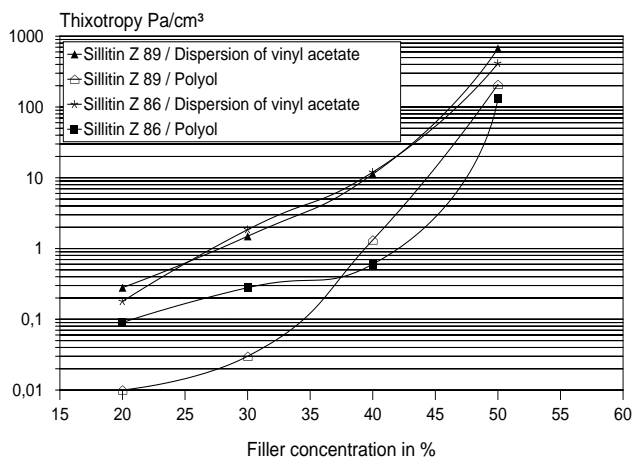
**Important:** The data on particle size distribution is highly dependent upon the method used, test preparations and the measuring device itself. As a result the values given may not be directly comparable with those provided by another manufacturer. If you have any queries please contact us direct.



## 5. Sedimentation



## 6. Rheology



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