

Thermoplastic polyurethane Powder, natural color

| Physical properties | | Test method | Specimen | Units | Typical value |
|---|--------------------------|-------------|-----------------|-------------------------|---------------|
| Specific gravity | | ISO 1183-3 | | g/cm ³ | 1,2 |
| Water absorption | 23°C / 24h | ISO 62 | MPTS ISO 3167 A | % | < 0,5 |
| Melt volume rate (MVR) | 190°C / 2,16kg | ISO 1133 | pellet | cm ³ /10 min | 18 |
| Shrinkage | | | test prints | % | 3 |
| Mechanical properties at 23°C / 50% rh | | | | | |
| Shore hardness A | | ISO 868 | molded sample | | 92 |
| Tensile strength (in-plane) | | DIN 53504 | sintered S1-bar | MPa | 20 |
| Tensile strength (out-of-plane) | | DIN 53504 | sintered S1-bar | MPa | 16 |
| Elongation (in-plane) | | DIN 53504 | sintered S1-bar | % | 520 |
| Elongation (out-of-plane) | | DIN 53504 | sintered S1-bar | % | 500 |
| Flexural modulus | DMA: 20°C, 1Hz / 2°C/min | ISO 6721-1 | sintered S1-bar | MPa | 27 |
| Flexural modulus | DMA: 60°C, 1Hz / 2°C/min | ISO 6721-1 | sintered S1-bar | MPa | 72 |
| Compression strength (in-plane) | | ISO 604 | Type A | MPa | 33 |
| Compression strength (out-of-plane) | | ISO 604 | Type A | MPa | 40 |
| Compression modulus (in-plane) | | ISO 604 | Type B | MPa | 15 |
| Compression modulus (out-of-plane) | | ISO 604 | Type B | MPa | 20 |
| Poisson ratio (Hencky) | 0.2 mm/s | | | | 0,45 |
| Thermal properties | | | | | |
| Glass transition temperature | DSC | ISO 11357 | molded sample | °C | -13,6 |
| Melting temperature | DSC | ISO 11357 | molded sample | °C | 160 |
| Vicat softening temp | VST A | DIN ISO 306 | MPTS ISO 3167 A | °C | 90 |
| Other properties | | | | | |
| Powder d10 | | Laser diff. | powder | µm | 25 |
| Powder d50 | | Laser diff. | powder | µm | 50 |
| Powder d90 | | Laser diff. | powder | µm | 105 |
| Powder bulk density | | | powder | g/cm ³ | 0,457 |
| Part bed powder density | | | powder | g/cm ³ | 0,6 |

Main features



REGULATORY

Powder for laser sintering (additive manufacturing). Elastic parts with high strength and high abrasive resistance.

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Recommended processing parameters

General

Powder bed temp.: 94 °C,
Laser power: 2 x 55 W @ 12,5 m/s,
Fill scan spacing: 0,15 mm,
Heater output limit: 30 %

Predrying

No predrying necessary. The powder should be de-agglomerated by using a screening process (250 microns sieve opening) before processing.

Processing

In general LUVOSINT TPU can be processed on conventional lasersinter machines while observing the usual technical guidelines. In contrast to conventional polyamide powders relatively low temperatures in the process chamber should be used here. At higher temperatures above 100 °C powder flowability and process stability will decrease. Aspiration is recommended due to formation of fume.

Delivery form & storage

Material will be delivered as 20 kg boxes on pallets.
Preferably storage should be effected in dry and normally temperatured rooms.

Additional information

Avoid part bed temperatures above 100 °C!

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