LUVOSINT®
Additive manufacturing solutions

Preliminary data sheet

LUVOSINT TPU X97A-1 WT

Ester based thermoplastic polyurethane TPU
Powder, white color

Physical Properties		Test Method	Specimen	Units	Typical Value
Specific Gravity		ISO 1183	Sintered part	g/cm³	1.2
Water Absorption	23 °C, 24 h			%	< 0.5
Melt Volume Rate	MVR 190 °C/10 kg	ISO 1133	Powder	cm³/10 min	46
Glass Transition Temp		ISO 6721-1		°C	4
Mechanical Properties					
at 23 °C/ 50 % rh	(according to build orientation)				
Shore Hardness A		ISO 868	Sintered part	-	97
Flexural Modulus		ISO 178	Sintered part	MPa	10
Tensile Strength (x-direction)		DIN 53504	Sintered S1-bar	MPa	26
Tensile Strength (z-direction)		DIN 53504	Sintered S1-bar	MPa	15
Elongation (x-direction)		DIN 53504	Sintered S1-bar	%	210
Elongation (z-direction)		DIN 53504	Sintered S1-bar	%	134
Abrasion Resistance (x-direction)		ISO 4649	Sintered part	mm³	41
Abrasion Resistance (z-direction)		ISO 4649	Sintered part	mm³	
Compression Strength (x-direction)		ISO 604	Type A	MPa	
Compression Strength (z-direction)		ISO 604	Type A	MPa	
Compression Modulus (x-direction)		ISO 604	Type B	MPa	
Compression Modulus (z-direction)		ISO 604	Type B	MPa	
Poisson ratio (Hencky)	0.2 mm/s				
Thermal Properties					
Vicat-softening Temperature	VST A	ISO 306	MPTS ISO 3167 A	°C	
Melting Temperature		ISO 11357		°C	164
Powder Properties					
x10		Laser diff.		µm	25
x50		Laser diff.		µm	65
x90		Laser diff.		µm	110
Bulk Density				g/cm³	
Part bed powder density				g/cm³	

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Application Examples

Powder for laser sintering (additive manufacturing). Elastic parts with high strength and high abrasive resistance for shoe and sports industry, pipes, sealings, prosthetics and many more applications.

Any recommendations made for use of Seller's materials are made to the best of Seller's knowledge and are based upon prior tests and experience of the Seller believed to be reliable; however, Seller does not guarantee the results to be obtained and all such recommendations are non-binding – also with regard to the protection of third party's rights –, do not constitute any representation and do not affect in any way Buyer's obligation to examine and/or test the Seller's our goods with regard to their suitability for his Buyer's purposes. No information given by the Seller is to be construed in any way as a guarantee regarding characteristics or duration of use, unless such information has been explicitly given as a guarantee.

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Recommended Processing Instructions

General

In general LUVOSINT TPU X97A-1 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. Aspiration is recommended due to formation of fume.

Predrying

No predrying necessary.

Processing Parameters

Due to the large variety of machines and part geometries given process parameters can only be seen as an orientation.

Temperature Part Bed	°C	115
Temperature Feed	°C	95
Scan Speed	inch/s	750
Hatch Distance	mm	0.15
Layer Thickness	mm	0.15
Laser Power	W	82

Delivery Form & Storage

The material will be delivered as 25 kg boxes on pallets.
Preferably storage should be effected in dry and normally temperatured rooms.

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