

## L-PBF PROCESS

<b>Layer thickness</b>	30 µm
<b>Laser power</b>	200 W
<b>Theoretical build-up rate</b>	8,6 cm <sup>3</sup> /h

## POWDER MATERIAL

Titanium Grade 2 is a pure titanium offering an excellent balance of strength and ductility. The yield strength achieved is comparable to stainless steels and directly achieved out of the process. Furthermore Titanium Grade 2 offers outstanding biocompatibility, which is why the material is mainly used for orthopedic implants and other medical applications. The process stability of pure Titanium allows for easy adapted printing of complex geometries.

## PHYSICAL PROPERTIES

<b>Particle Size</b>	15 µm – 45 µm
<b>Density</b>	4,5 g/cm <sup>3</sup>
<b>Thermal conductivity</b>	17 W/mK
<b>Melting range</b>	1665°C – 1677 °C
<b>Thermal expansion</b>	8 x 10 <sup>-6</sup> K <sup>-1</sup> – 9 x 10 <sup>-6</sup> K <sup>-1</sup>

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US-Dollar Account: 107877301 | Routing: 39070024  
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## CHEMICAL COMPOSITION

Element -	Mass fraction
<b>Ti</b>	Balance
<b>C</b>	<0,08%
<b>Fe</b>	<0,2%
<b>H</b>	<0,015%
<b>N</b>	<0,03%
<b>O</b>	<0,25%
<b>Others Each</b>	<0,1%
<b>Others Total</b>	<0,4%

## MECHANICAL DATA

### As built

<b>Tensile strength</b>	R <sub>m</sub>	730 ± 12 MPa
<b>Yield strength</b>	R <sub>p0,2</sub>	585 MPa ± 60 MPa
<b>Elongation at break</b>	A	4,7% ± 1,5%
<b>Roughness average</b>	Ra	12 µm ± 3 µm
<b>Mean roughness depth</b>	Rz	75 µm ± 7 µm

*All values are subject to natural volatilities depending on applied powder material, process parameters and surrounding conditions.*

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