

L-PBF PROCESS

Layer thickness	30 µm
Laser power	1000 W
Theoretical build-up rate	7,8 cm ³ /h

POWDER MATERIAL

Cu-OF is a high-purity, non-deoxidized and oxygen-free and has a high conductivity for electricity and heat. In addition to very good hot and cold formability, this copper grade also has good corrosion resistance, especially to atmosphere (well adhering oxide layer) and water, and is practically insensitive to stress corrosion cracking. It is resistant to heat treatment in a reducing atmosphere and can be welded, brazed and soldered well. Cu-OF is mainly used in electrical engineering, electronics and vacuum technology in various semi-finished product forms. With our advanced process parameters it is possible to achieve densities above 99.5% and electrical conductance above 100% IACS right out of the LPBF-Process.

PHYSICAL PROPERTIES

Particle Size	15 µm – 45 µm
Density	8,94 g/cm ³
Thermal conductivity	394 W/mK
Electrical conductivity	58 MS/m (100% IACS)
Melting temperature	1083 °C
Thermal expansion	17,0 x 10 ⁻⁶ K ⁻¹

CHEMICAL COMPOSITION

Element -	Mass fraction
Cu	>99,95
O	<0,05%
Etc.	<0,02%

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US-Dollar Account: 107877301 | Routing: 39070024
 Deutsche Bank PGK Aachen
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MECHANICAL DATA

As built

Tensile strength	R _m	200 MPa ± 20 MPa
Yield strength	R _{p0,2}	180 MPa ± 10 MPa
Elongation at break	A	5% ± 1%
Young's modulus	E	127 GPa
Vickers Hardness		80 HV 0,1 ± 15 HV 0,1
Roughness average	R _a	5 μm – 7 μm
Mean roughness depth	R _z	25 μm – 33 μm

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

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