

DIRECT METAL LASER SINTERING

COPPER CUNI2SiCr

PRODUCT SPECIFICATIONS

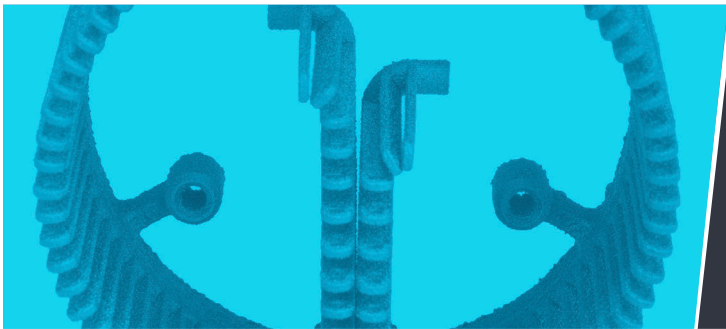


PRODUCT DESCRIPTION:

Copper CuNi2SiCr is a low alloyed Copper-Material which combines good mechanical properties with high thermal and electrical conductivity. Usually used in more rough environments where pure copper is not feasible.

APPLICATIONS:

Copper CuNi2SiCr is an excellent choice when high thermal and/ or electrical conductivities are needed.



KEY PRODUCT BENEFITS

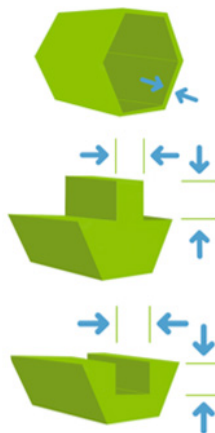
- Good mechanical properties
- High thermal conductivity
- High electrical conductivity

CHEMICAL COMPOSITION:

According 2.0855; CW111C; C18000

Cu (balance)
Si (0,50 - 0,80 wt-%)
Mn ($\leq 0,1$ wt-%)
Cr (0,20 - 0,50 wt-%)
Ni (2,00 - 3,00 wt-%)
Fe ($\leq 0,15$ wt-%)
Pb ($\leq 0,02$ wt-%)

GEOMETRICAL LIMITS:



Min Wall thickness 1.00 mm - Min. Feature Size 1,00 mm

Min. embossed details 0.5mm high and wide and 0.8mm for readable text and clear images

Min. engraved details 0.5mm deep and 0.6mm wide; 1.0mm wide for readable text and clear images

PROPERTIES:

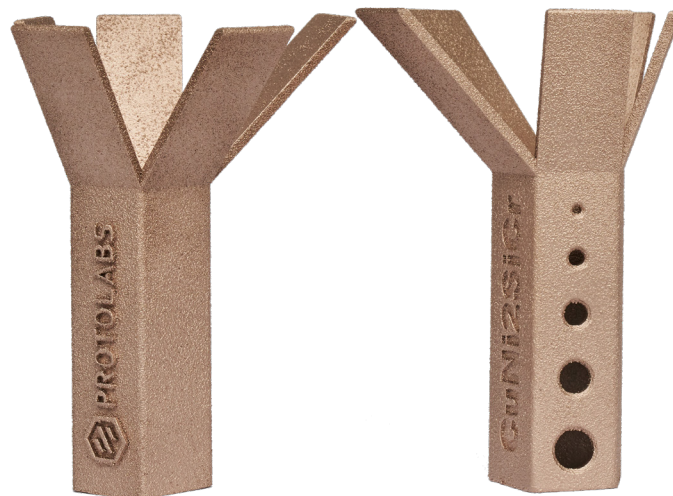
Heat Treatment	Young's Modulus GPa	Tensile Strength MPa	Yield Strength 0,2% MPa	Elongation %	Hardness	Density
/	110 GPa +/- 10 GPa	250 MPa +/- 20 MPa	210 MPa +/- 20 MPa	> 30%	---	> 99,5 %
Precipitation Hardening	130 GPa +/- 10 GPa	630 MPa +/- 50 MPa	580 MPa +/- 50 MPa	~ 10%	HB 220	> 99,5 %
	As Built			Precipitation Hardening		
Thermal Conductivity	90 W/mK			190 W/mK		
Electrical Conductivity	8 MS/m			23 MS/m		

RESOLUTION:

	Layer Thickness	Build Envelope	Min. Feature Size
Fine Resolution	0,02 mm	100 x 100 x 100 mm	1,00mm

SURFACE:

	0 °	45 ° bottom	45 ° top	90 °
Fine Resolution	Ra 15 µm Rz 65µm	Ra 11 µm Rz 50 µm	Ra 8 µm Rz 40 µm	Ra 15 µm Rz 65 µm



Fine Resolution 20 µm

STANDARD TOLERANCES:

Typically, for well-designed parts, with a designated build direction, tolerances of +/- 0.1 mm to +/- 0.2 mm + 0.005 mm/mm are expected and achieved.

Certain geometries may cause distortions due to internal stress which may lead to higher deviations.