



Copper C18150

DIRECT METAL LASER SINTERING MATERIAL SPECIFICATIONS

Highlights

- Chromium Zirconium Copper (CuCr1Zr)
- Excellent electrical and thermal conductivity
- Mechanical and material properties stable up to 700°F
- Age Hardenable

Applications:

- Excellent thermal and electrical conductivity
- Conformal induction coils
- Regeneratively cooled nozzles
- Plastic mold components

TYPICAL PHYSICAL PROPERTIES

MECHANICAL PROPERTIES (Z AXIS)	AS BUILT	SR	SR + HIP	SR + HIP + SHT	SR + HIP + SHT + PHT
Yield Strength	22 ksi	27 ksi	16 ksi	17 ksi	36 ksi
Ultimate Tensile Strength	30 ksi	34.6 ksi	36.3 ksi	37 ksi	55 ksi
Modulus	103 GPa	96 GPa	117 GPa	110 GPa	124 GPa
Elongation	31%	14%	47%	48%	31%
Hardness	90 Rockwell B	108 Rockwell B	80 Rockwell B	94 Rockwell B	87 Rockwell B

HEAT TREATMENT OPTIONS

- Stress Relief (SR)
- SR + Hot Isostatic Press (HIP)
- SR + HIP + Solution Anneal (SHT)
- SR + HIP + SHT + Precipitation Strengthening (PHT)

COPPER C18150 COMPOSITION*

ELEMENT	TYPICAL PERCENTAGE
Chromium (Cr)	0.5 Min & 1.5 Max
Nitrogen (N)	0.1 max
Oxygen (O)	0.1 max
Zirconium (Zr)	0.05 Min & 0.20 Max
Other	0.3 Max

*UNS C18150, AMS, and/or additional industry standards and designations

The information presented represents typical values intended for reference and comparison purposes only. It should not be used for design specifications or quality control purposes. End-use material performance can be impacted (+/-) by, but not limited to, part design, end-use conditions, test conditions, color etc. Actual values will vary with build conditions. Product specifications are subject to change without notice. *Chemical analysis for specific lots available upon request.

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