



# Copper C18150

## DIRECT METAL LASER MELTING 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
<b>Yield Strength</b>	22 ksi	27 ksi	16 ksi	17 ksi	36 ksi
<b>Ultimate Tensile Strength</b>	30 ksi	34.6 ksi	36.3 ksi	37 ksi	55 ksi
<b>Modulus</b>	103 GPa	96 GPa	117 GPa	110 GPa	124 GPa
<b>Elongation</b>	31%	14%	47%	48%	31%
<b>Hardness</b>	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
<b>Chromium (Cr)</b>	0.5 Min & 1.5 Max
<b>Nitrogen (N)</b>	0.1 max
<b>Oxygen (O)</b>	0.1 max
<b>Zirconium (Zr)</b>	0.05 Min & 0.20 Max
<b>Other</b>	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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