

► **GRCop-42 (Cu-Cr-Nb)**

Product Information

GRCop-42 was developed by NASA for Laser Powder Bed Fusion (L-PBF) aerospace applications to maintain its physical and mechanical properties at elevated temperatures.

Physical and Chemical Properties

Material composition: Cu-4%Cr-2%Nb

Maximum theoretical density: 8.89 g/cm³

As-printed relative density: > 99.2% (>99.9% after HIP)

Ultimate tensile strength ^[1]: 52 ± 1 ksi

Yield strength ^[1]: 27 ± 2 ksi

Elongation ^[2]: 31.8 ± 2 %

Modulus of elasticity ^[3]: 129.7 ± 2 GPa

Thermal conductivity (Room Temp.): 285 – 290 [W/m-K]

Thermal Conductivity (Cryo & Elevated Temp.): Pending

Deposition rate: 8.4 [mm³/s]

Surface roughness as built: < 20 [um]

^[1]ASTM E8, ^[2]ASTM E18, ^[3]ASTM E494-15 (ultrasonic velocity)

All stated values are approximate values. All details given above are our current knowledge and experience, and are dependent on the equipment, parameters, and operating conditions. The data provided in this document is subject to change and only intended as general information on a material set that is continually improving and developing. The data does not provide a sufficient basis for engineering parts. All samples were produced on an EOS M290 or M400. All tensile tests were performed at third party certified test labs such as Westmoreland Mechanical Testing & Research and Product Evaluations Systems.

All values are in the HIP condition unless otherwise specified.

Please contact us at sales@additivemanufacturingllc.com for additional information.