Material Data Sheet:
18K Red 5N Powder for Additive Manufacturing

Powder specification data

Powder Chemical composition [wt.%]	Au:75.1%;Ag:4.5%;Ir:0.02%;Balance: Cu and Zn
Particle size d50	23 µm
Particle size d90	50 µm
Basic Flowability Energy	1402.8 mJ
Application	LPBF
Atomization	Argon Gas Atomized

Material description

18K Red 5N Powder is a high-quality precious metal alloy powder specifically designed for additive manufacturing processes, such as Laser Powder Bed Fusion (LPBF). This unique alloy, composed predominantly of gold with copper as the secondary component, exhibits a rich red color, making it ideal for luxury, jewelry, and decorative applications. The precision and fine quality of the powder ensure exceptional performance during additive manufacturing, offering excellent mechanical properties and detailed accuracy.

Material properties	Applications
Thermal Conductivity	Luxury Jewellery
High Corrosion Resistance	Decorative Arts
Electrical Conductivity	Electronis
Durability	Dental Components
Versatility	Watch Components

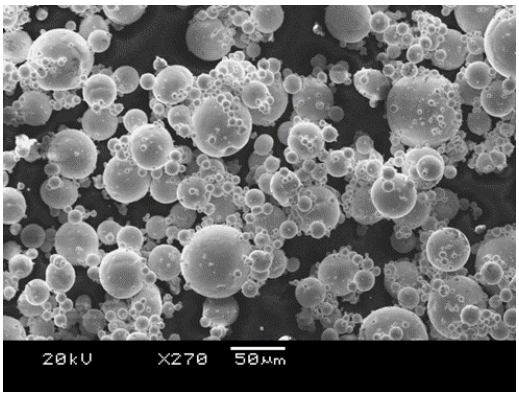

FIGURE 1—SEM IMAGE OF TYPICAL 18k Red Powder

Mechanical Properties of additively manufactured components

Yield Strength (MPa)	252.18 ± 4.93
Ultimate tensile strength (MPa)	412.12 ± 11.32
Hardness (Vickers)	169.18 ± 3.43
Porosity %	0.3%
Young Modulus (GPa)	79.87 ± 2.64

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