

Material Data Sheet: Platinum with Oxide Dispersion Strengthening (Pt-ODS) 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	30 µm
Particle size d90	70 µm
Basic Flowability Energy	1951.4mJ
Application	LPBF
Atomization	Argon Gas Atomized



Material description

Pt-ODS alloy, also known as Platinum with Oxide Dispersion Strengthening, is an advanced material designed to enhance the mechanical and thermal properties of platinum through the incorporation of fine, stable oxide particles. The addition of oxide particles improves the material's strength, creep resistance, and stability at elevated temperatures, making it suitable for demanding applications. Pt-ODS exhibits superior performance in high-temperature environments and harsh chemical conditions, where its enhanced hardness and resistance to deformation are crucial. This makes it an ideal choice for use in aerospace components, glass industry, catalytic converters, and high-performance industrial applications. The oxide dispersion also contributes to improved material longevity and reliability, ensuring that Pt-ODS maintains its structural integrity and performance over extended periods

Material properties	Applications
High Temperature strength	Luxury Jewellery
High Corrosion Resistance	Catalysts in fuel cells
High melting point of	Electronic
Durability	Glass Industry
Versatility	Chemical Processing

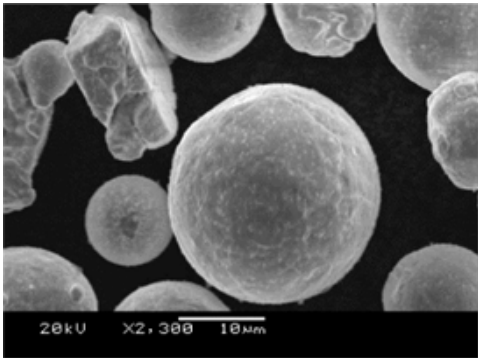


FIGURE 1—SEM IMAGE OF TYPICAL Pt-ODS Powder

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