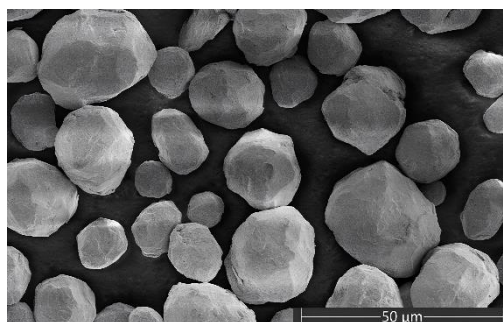


Cu10Sn AM 15-53 μm

Alloy: C90500 / CW451K

1. Introduction

Cu10Sn 15-53 μm is a high-performance bronze alloy powder composed of 90% copper and 10% tin, characterized by excellent corrosion resistance, high strength, and good thermal and electrical conductivity. The powder features a highly spherical morphology and narrow particle size distribution, ensuring superior flowability and consistent layer deposition in additive manufacturing processes. Designed for laser powder bed fusion (LPBF) and binder jetting, Cu10Sn is ideally suited for producing functional components, molds, and tooling inserts requiring a balance of mechanical strength, wear resistance, and thermal stability.



1.1 Basic facts

Chemistry	Cu: 90; Sn: 10% (C90500 / CW451K)
Form	Powder
Shape / Morphology	Spherical / Spheroidal
Size	15-53 μm
Apparent density	min. 4.6 g/cm ³
Purpose	Tribological applications, corrosion-resistant components, Artistic parts, Components of musical instruments
Process	LPBF, Binder Jetting

1.2 Typical Applications

- Molds and Tool Inserts
- Bearing and Bushing Components
- Marine and Aerospace Components
- Decorative and Artistic Parts
- Heat Exchangers and Cooling Elements
- Electromechanical Components
- Functional Prototypes and End-Use Mechanical Parts

2 Material Information

2.1 Chemical composition

Element	Analysis wt.%	Requested by C90500 wt%
Cu	Balance	Balance
Sn	10.5	9.0 – 11.0
Sb	0.0020	max 0.25
Zn	0.021	max 1.0
P	<0.001	max 0.05
Al	<0.001	max 0.005
Si	<0.001	max 0.01
Mn	<0.001	max 0.10
Ni	0.0029	max 1.0
Pb	0.0052	max 0.05
Fe	0.0013	max 0.10
S	<0.001	max 0.05

2.2 Additional Material Characteristics

Property	Value	Unit
Apparent Density	Min. 4.6	g/cm ³
Tap Density	Min. 5.5	g/cm ³
Flowability	Max. 20	s/50g
Shape	Spherical / Spheroidal	-

2.3 Recommended processes

- LPBF - Laser Powder Bed Fusion
- BJet -Binder Jetting

2.3 Mechanical properties

Property	Value	Unit
As-printed desnity	> 99.9	%

Property	Unit	Horizontal		Vertical	
		Value	Std. dev.	Value	Std. dev.
Young modulus	GPa	123	± 6	107	± 19
R _{p0.2}	MPa	371	± 3	346	± 5
R _m	MPa	465	± 6	432	± 4
A ₂₀	%	6.2	± 0.6	7.4	± 0.6

* according to DIN EN ISO 6892-1

* n=5

3 Commercial Information

3.1 Ordering Information and Availability

Product	Package Size	Package Type	Availability	Distribution
Cu10Sn AM 15-53 μm	10kg	Wide-neck drum UNX	Stock	Europe

3.2 Storage and Handling Guidelines:

- Always store the product in its original container in a dry environment.
- Gently rotate the container before use to ensure even distribution. Avoid aggressive handling to prevent damage to fragile, mechanically clad components.
- Once opened, powder containers should be kept in a drying oven to prevent moisture absorption.
- If a desiccant is present, be sure to remove it prior to using the product.

3.3 Safety Recommendations

Refer to the Safety Data Sheet (SDS). SDS document can be accessed on the Ultra Metal Powders website at www.umpowders.com under Resources → Safety Data Sheets.