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CuNi 70/30 OptiPowder C71500:
Corrosion-Resistant Copper-Nickel Alloy for Marine and Industrial Applications

Overview

CuNi 70/30 OptiPowder C71500 is a copper-nickel alloy powder designed for excellent corrosion resistance, strength, and durability in demanding environments. The alloy performs well in seawater and brackish conditions, offering strong resistance to corrosion, stress-corrosion cracking, and erosion in high-velocity, turbulent flow.

OptiPowder C71500 is produced using Continuum's M2P gas atomization system, a plasma-based process that converts qualified reclaimed metal into high-quality spherical powder in a single step. Powered by green energy and tightly controlled process conditions, this approach reduces the carbon footprint of powder production while delivering consistent chemistry, flowability, and particle morphology from lot to lot.

Typical Applications

OptiPowder C71500 is engineered for components operating in corrosive and high-flow environments, including:

- Marine and offshore systems exposed to seawater and brine
- Heat exchangers, condensers, and piping systems
- Energy and desalination infrastructure
- Industrial components exposed to high-velocity fluid flow

Nominal Composition (wt.%)

Element	Min	Max
Cu	Balance	Balance
Ni	29.0	33.0
Fe	0.40	1.0
Zn	-	1.0
Mn	-	1.0
Pb	-	0.05

Aligned with CDA C71500 CuNi 70/30 specification (values may be adjusted per customer requirements).

Powder Physical Properties

Property	Unit	Max
Apparent Density	g/cc	4.5
Tapped Density	g/cc	5.5
Morphology	Spherical	Satellite-free
Hall Flow Time	s/50g	<20

Data representative of 15–45 µm PSD.

Additive Manufacturing Process Compatibility

OptiPowder C71500 supports a range of AM and advanced manufacturing processes, including:

Laser Powder Bed Fusion (LPBF):
Corrosion-resistant components with complex geometries

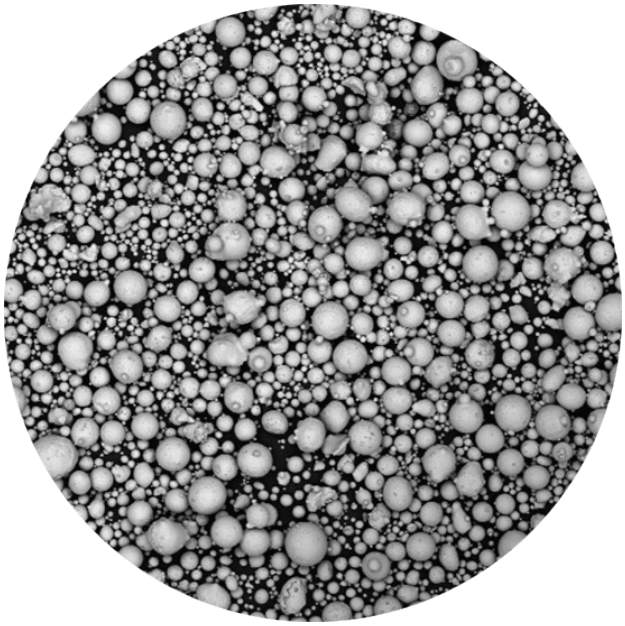
Electron Beam Processing (EBM) and HIP:
For larger or consolidated structures

Binder Jetting (MBJ):
Cost-effective production of larger components

Directed Energy Deposition (DED):
Repair and build-up of corrosion-resistant parts

Available PSDs & Customization

OptiPowder C71500 is available in multiple particle size distributions, including 0–15 µm, 15–45 µm, and 45–106 µm, with custom PSDs, blended distributions, and program-based supply available on request to support specific process requirements and qualification needs.



Morphology

Powder morphology is predominantly spherical with minimal satellites, with no hollow particles, excessive agglomeration, or foreign-object defects visible at ~300× magnification.

Blending

Multiple heats may be blended into a single lot when each heat independently meets all chemical and PSD requirements.

Certification

Each shipment includes a certificate of analysis reporting chemical composition, particle size distribution, and any additional agreed-upon test results demonstrating conformance to specifications.

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