

OptiPowder CoCr F75: High-Strength, Wear-Resistant Alloy for Demanding Applications

Overview

OptiPowder CoCr F75 is a cobalt-chromium-molybdenum alloy designed for applications requiring high strength, wear resistance, corrosion resistance, and thermal stability. The alloy maintains mechanical integrity across a wide range of operating conditions and is widely used in aerospace, industrial, and medical applications

OptiPowder CoCr F75 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 CoCr F75 is engineered for high-performance components operating in demanding environments, including:



Aerospace turbine components such as nozzles and vanes



Industrial wear parts exposed to abrasion and high loads



Medical and dental components, including implants and prosthetics



Energy and process equipment requiring corrosion and thermal resistance

Nominal Composition (wt.%)

Element	Min	Max
Co	Balance	Balance
Cr	27	30
Mo	5	7
Fe	-	0.75
C	-	0.35

Element	Min	Max
Mn	-	1.0
Si	-	1.0
N	-	0.25

Aligned with ASTM F75 specification (ranges may be adjusted per customer requirements).

Powder Physical Properties

Property	Unit	Max
Apparent Density	g/cc	>4
Oxygen Content	g/cc	<0.05
Morphology	Spherical	
Hall Flow Time	s/50g	<20

Data representative of 15–45 μm PSD.

Additive Manufacturing Process Compatibility

OptiPowder CoCr F75 supports a wide range of AM and advanced manufacturing processes, including:

Laser Powder Bed Fusion (LPBF):

High-strength, wear-resistant components with fine feature resolution

Metal Injection Molding (MIM) and EBM:

Production of complex, high-performance parts

Binder Jetting (MBJ):

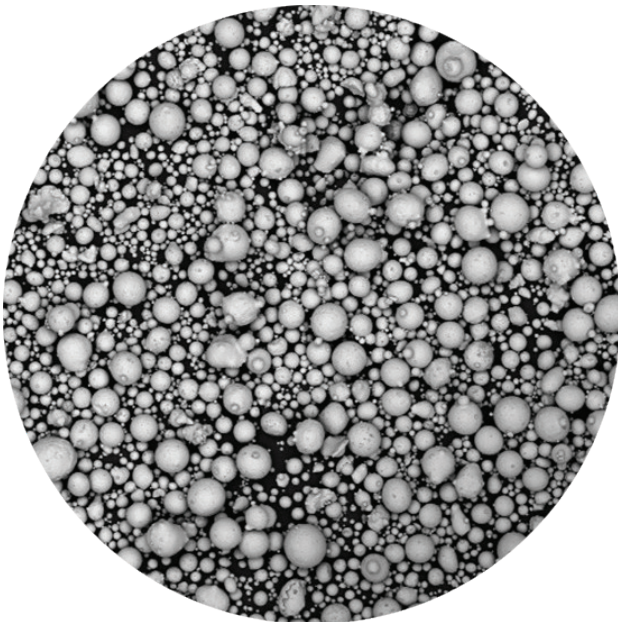
Scalable production of complex geometries prior to densification

Directed Energy Deposition (DED):

Repair and build-up of high-wear components

Available PSDs & Customization

OptiPowder CoCr F75 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 $\sim 300\times$ 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.