

A-Powder CoCrMo Cobalt-Chrome

Gas-atomized cobalt-chromium-molybdenum superalloy for laser powder bed fusion (LPBF)

A-Powder CoCrMo is a cobalt-chromium-molybdenum superalloy for LPBF. It combines outstanding wear and corrosion resistance with high hardness and biocompatibility — the standard for dental frameworks, orthopedic implants and wear-critical parts. US-produced, gas-atomized for high sphericity and low oxygen; every lot ships with a Certificate of Analysis.

POWDER SPECIFICATION

Alloy / grade	CoCrMo cobalt-chrome superalloy
Equivalents	ASTM F75 · UNS R30075
Particle size (PSD)	15–53 µm (custom cuts available)
Production method	VIGA · US-produced
Morphology	Spherical, high sphericity, low O ₂
Density	≈ 8.3 g/cm³
Process	LPBF (machine type F)
Packaging	10 kg bottle · 440 / 840 kg hopper

MECHANICAL PROPERTIES — AS-BUILT

Ultimate tensile strength	~ 1100 MPa
Yield strength (Rp0.2)	~ 750 MPa
Elongation at break	~ 10 %
Hardness	~ 40 HRC
Relative density	> 99 %

Indicative as-built values, process-dependent. Application-specific heat treatment / HIP for implantable parts. High hardness makes near-net AM a key advantage.

CHEMICAL COMPOSITION (WT %)

ELEMENT	CONTENT	ELEMENT	CONTENT
Cobalt (Co)	Balance	Iron (Fe)	≤ 0.75
Chromium (Cr)	26.0–30.0	Nickel (Ni)	≤ 0.50
Molybdenum (Mo)	5.0–7.0	Carbon (C)	≤ 0.16
Si / Mn	≤ 1.0	Nitrogen (N)	≤ 0.25

MATERIAL COMPARISON

FEATURE	COCRMO	316L	TI-6AL-4V
Type	Co-Cr-Mo superalloy	Austenitic stainless	α-β titanium
Wear resistance	Excellent	Moderate	Moderate
Biocompatibility	Excellent	Good	Excellent
Density	~8.3 g/cm³	~8.0 g/cm³	~4.4 g/cm³

TYPICAL APPLICATIONS

Dental frameworks

Orthopedic implants

Wear parts & bearings

Turbine & high-temp

COMPATIBILITY & SUPPLY

LPBF systems	AO Metal A50 / A100 · open-parameter
Certification	Full COA per lot (PSD, chemistry, density, flow)
Dispatch	5–10 business days from Los Angeles