



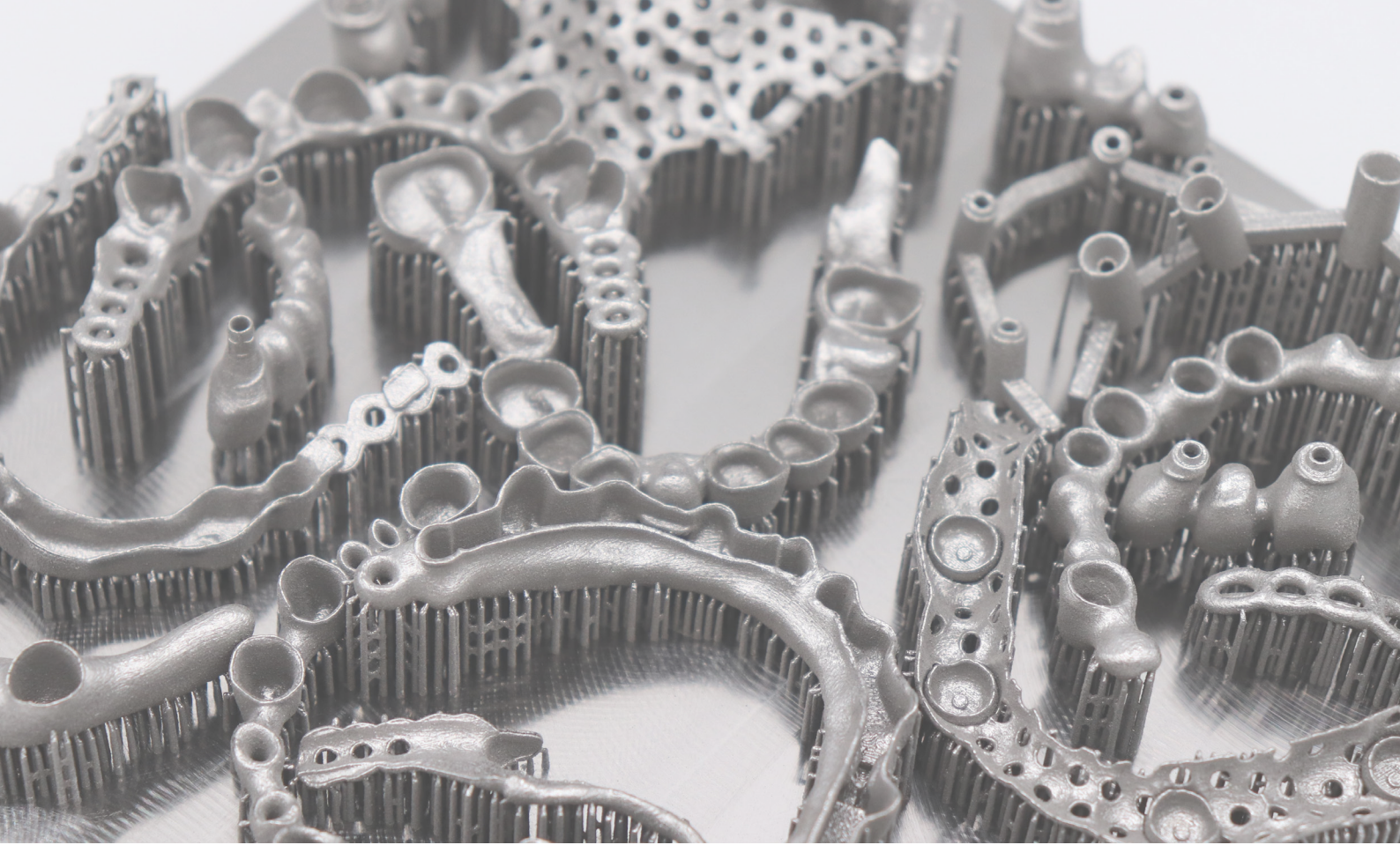
ONE CLICK METAL

Cobalt Chrome CoF75

MATERIAL DATA SHEET

www.oneclickmetal.com

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Cobalt Chrome CoF75

The material CoF75, is a high strength, corrosion resistant cobalt-based alloy. The combination of Cobalt and Molybdenum increases wear resistance of the alloy. Apart from having excellent mechanical properties, the alloy is also bio compatible, making it ideal for implants and other medical applications. The alloy can also perform well at high temperatures without significant loss in the mechanical properties.

Properties

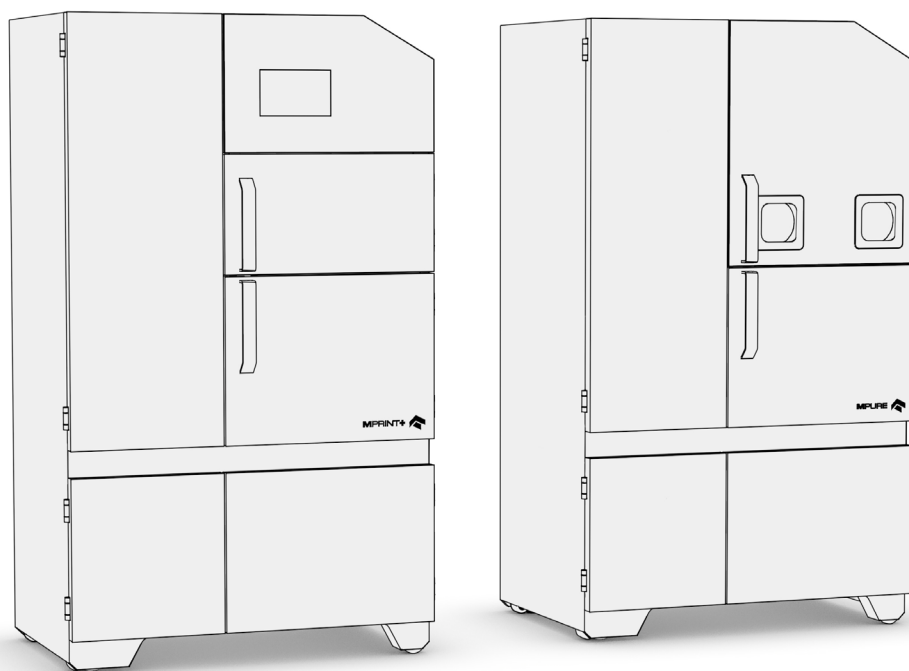
- Good corrosion resistance
- Good wear resistance
- Good tensile strength
- Bio compactable

Applications

- Aviation and aerospace
- Medical industry
- Wear resistant tools

Powder Properties

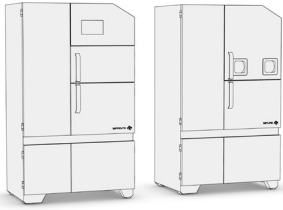
Powder chemical composition (wt.-%)		
Element	Min.	Max.
Co	Basis	
Al	0.10	
B	0.01	
C	0.14	
Cr	27.0	30.0
Fe	0.75	
Mn	1.0	
Mo	5.0	7.0
N	0.25	
Ni	0.5	
O	0.05	
P	0.02	
S	0.01	
Si	1	
Ti	0.1	
W	0.2	



Process information

The CoF75 powder provided by One Click Metal is optimized for the production of robust components with MPRINT and MPUREpro of the BOLDseries.

System Set-up	MPRINT
Parameter	CoF75 30µm
Software	Netfabb
Powder part-no.	CoF75
Layer thickness	30µm
Coater	X-Lip
Inert gas	Nitrogen
Sieve	63µm



Physical and Mechanical Properties

The mechanical properties of CoF75 are in the higher range. The tensile strength of the alloy is typically in the range of 600 to 1500 MPa. The wide range is because the alloy is heat treatable and based on the type of heat treat the tensile strength varies. The alloy has a operating temperature range of approximately -200°C to 800°C.

Physical properties

Defects	Result
Average defect (%)	<0.4

Surface quality (measured along the z-axis)

As built	Ra [µm]	5
	Rz [µm]	15
Blasted	Ra [µm]	2
	Rz [µm]	6

Mechanical properties ISO6892-1

Vertical	Yield strength Rp0.2 [MPa]	Tensile strength Rm [MPa]	Elongation at break A [%]
Average	719	1197	21,9
Standard deviation absolute	54	23	3,6
Standard deviation percentage	8	2	16