

ONE CLICK METAL

Nickel alloy 2.4668/Alloy 718
20 μ m

MATERIAL
DATA SHEET

www.impactsystems.com

2023.06



Nickel alloy 2.4668/Alloy 718

The material 2.4668/Alloy 718 is a corrosion resistant high strength nickel-based super alloy. The presence of higher concentrations of Molybdenum and chromium the material exhibits excellent corrosion and oxidation resistance even at elevated temperatures. The material 2.4668 is heat treatable and this makes the material to be customized for various applications.

Properties

- High strength and toughness
- Good corrosion and oxidation resistance
- Good processability
- Good creep resistance

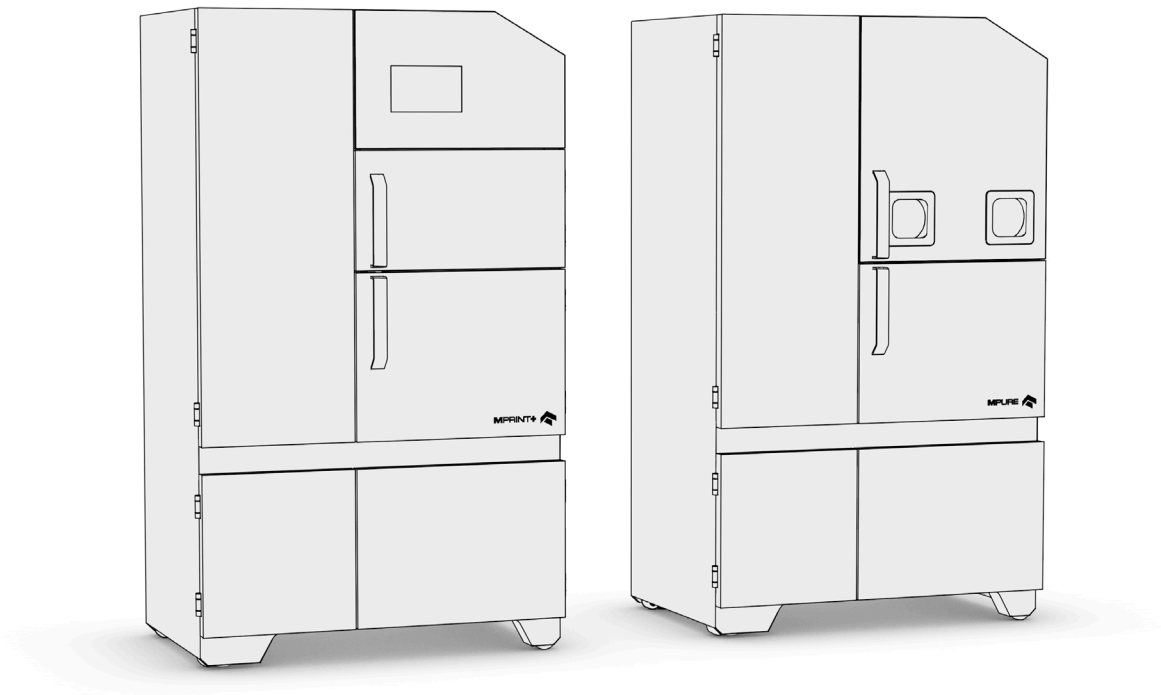
Applications

- Aviation and Aerospace
- Energy industry
- Casting industry
- Automotive industry

Powder properties

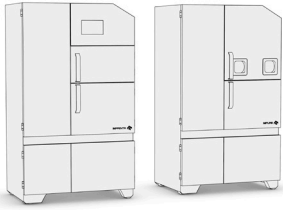
Chemical Composition (wt.-%)

Element	Min.	Max.
C	<0.08	
Si	<0.35	
Mn	<0.35	
Co	<1.0	
Cr	17	21
Ni	50	55
Mo	2.8	3.3
Ti	0.6	1.25
Al	0.3	0.7
Nb	4.7	5.5
Fe	Balance	



Process information

System Set-up	MPRINT
Parameter	2.4668/Alloy 718 20µm
Software	Netfabb
Powder part-no.	MSUPPLY 2.4668
Layer thickness	20µm
Coater	X-Lip
Inert gas	Nitrogen
Sieve	80µm



Physical and Mechanical Properties

In annealed condition the tensile strength of the material is ca. 1030 N/mm². But based on the heat treatment method used, the tensile strength can increase to ca. 1450 N/mm². The material has an excellent creep rupture strength and can retain most of the properties at elevated temperatures. The operating temperature range of the material ranges from cryogenic temperature to 700°C. The material also has excellent oxidation resistance up to 1000°C.

Physical properties

Defects	Result
Average defect (%)	<0.1

Surface quality (measured along the z-axis)

As built	Ra [µm]	2
	Rz [µm]	10
Blasted	Ra [µm]	1
	Rz [µm]	7

Mechanical properties ISO6892-1

Vertical	Yield strength Rp0.2 [MPa]	Tensile strength Rm [MPa]	Elongation at break A [%]	Reduction of area Z [%]
Average	649	968	35	58
Absolute Standard Deviation	17	4	1	3
Relative Standard Deviation	3	0.4	3	5