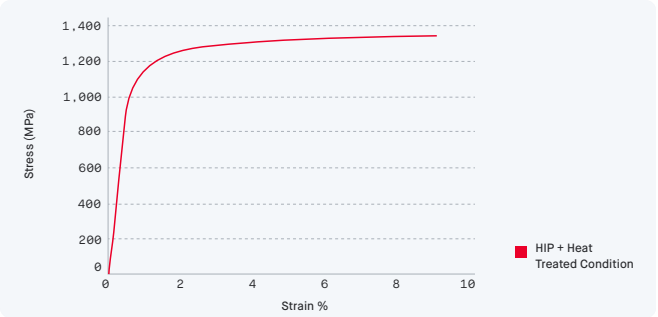
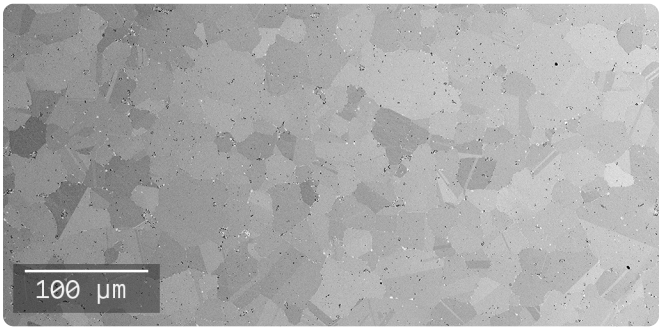
[Material Data Sheet]

IN718
Nickel Alloy
PureSinter Furnace





COMPOSITION %

Fe	Balance
C	0.08 (max)
Cr	17 – 21
Ni	50 – 55
Mo	2.8 – 3.3
Nb	4.75 – 5.5
Ti	0.65 – 1.15
Al	0.2 – 0.8
Co	1 (max)
Mn	0.35 (max)
Si	0.35 (max)
Cu	0.3 (max)
P	0.015 (max)
S	0.015 (max)

MECHANICAL PROPERTIES IN DESKTOP METAL PURESINTER FURNACE

	Standard	X-Series HIP, heat treated, room temperature tested	AMS 5917 HIP, heat treated, room temperature tested
Ultimate tensile strength (MPa)	ASTM E8/E8M	1345 ± 12	1041
0.2% Yield strength (MPa)	ASTM E8/E8M	1150 ± 11	1034
Elongation at break (%)	ASTM E8/E8M	9.2 ± 0.9	6
Reduction in area (%)	ASTM E8/E8M	10.4 ± 1.1	8 min
Young's modulus (GPa)	ASTM E111	210	-
Hardness (HRC)	ASTM E18	44.6 ± 0.9	33-34
Density (g/cc)	ASTM B311	8.238 ± 0.002	8 min
ASTM Grain Size	ASTM E112	7	5 or finer

ATTRIBUTES & APPLICATIONS

High temperature strength	Corrosion resistance
Creep resistance	Gas turbine applications
Oxidation resistance	Rocket applications

OTHER STANDARD DESIGNATIONS

UNS07718	AMS 5664
AMS 5662	DIN NiCr19Fe19NbMo3

1. Mechanical properties measured on Y-direction bars +/- 1 standard deviation
2. Hot Isostatic Pressing process: 1163C +/- 14C, 240min +/- 60 min, 1017 +/- 17 bar
3. Precipitation heat treatment according to AMS5917
4. Listed designations are for reference purposes only. Composition and mechanical properties may vary
5. End-use material performance is impacted (+/-) by certain factors including but not limited to part geometry and design, application and evaluation conditions, etc