

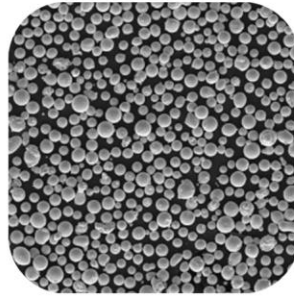
Material Description

718 meter powders have been specifically designed and optimized for use in Additive Manufacturing (AM).

718 metal powders are widely used and successfully proven in AM. 718 processes well across the broad spectrum of AM machines and technologies due to their excellent fusion and melting characteristics in PBF and EBM applications.

718 is a nickel superalloy which offers good fatigue resistance at high temperatures. This grade is particularly suitable for aerospace and oil & gas applications and delivers good tensile strength.

Powder SEM



Part Sample



Material Properties

Good corrosion resistance
Good tensile strength
Fatigue resistance

Typical Applications

Jet engines
Gas turbines
Tooling
High temperature applications

Relevant Sectors

Aerospace
Energy
Precision Engineering

Powder Properties	
Part no.	718
PSD	15-45 µm
Application	PBF
Part no.	718
PSD	20-53 µm
Application	PBF
Part no.	718
PSD	45-150 µm
Application	DED
Part no.	718
Application	45-106 µm
PSD	EBM
General Properties	
PSD	D10, D50, D90 reported
Apparent Density	Measured and Reported
Flow	Measured and Reported

Chemical Composition	
Ni	50-55
Fe	Bal.
Cr	17-21
Nb+Ta	4.75-5.5
Mo	2.8-3.3
Ti	0.65-1.15
Co	1.0 Max
Al	0.2-0.8
Mn	0.35 Max
Si	0.35 Max
Cu	0.3 Max
C	0.08 Max
N	≤0.03
O	≤0.03

Nominal WT%

Industry Powder Names	
Generic name	IN718
Generic name	Alloy 718
Generic name	Nickel 718
GE Additive	Nickel 718
SLM Solutions	IN718
Renishaw	In718-0405
EOS	NickelAlloy IN718

Atomisation Process

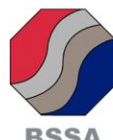
Vacuum inert gas atomisation
Anti-satellite technology
Argon gas atomised

Powder Quality

Highly Spherical
Excellent flowability

Applicable Specification

ASTM F3055
Other specifications: DIN 2.4668, UNS N07718



Physical Properties

Generic Data – Wrought Material	
Density	8.19 g/cm ³
Thermal Conductivity	6.5 W/mK
Melting Point	1370°C - 1440°C
Coefficient of thermal expansion	13 10 ⁻⁶ K ⁻¹

*typical values

Heat Treatment

HIP minimum requirements of 100 MPa at 1141°C for 4 hours. Note: part size will impact the aging time required. Follow with solution annealing or precipitation heat treatment to suit application.

Further information on heat treatment and stress relieving can be provided by our technical experts by contacting: sales@broder-powder.com

Contact

Broder Powder is committed to providing our global customers with world-beating customer service through direct support, metallurgy and our AM expertise.

Please contact Broder Powder for additional information.

Broder Powder offers a diverse range of metal powders and alloys for Additive Manufacturing (AM) and Hot Isostatic Pressing (PM-HIP), along with next generation alloy development maximising the potential benefits and solutions that AM and PM-HIP can deliver.

Our core range of metal powders include Stainless Steel, Nickel, Aluminium and Titanium.

Other alloys are available upon request.

Broder Metals Group Limited
XMP House
2 Starnhill Close
Ecclesfield, Sheffield, S35 9TG
Telephone 0114 232 9240
sales@broder-powder.com
www.broder-powder.com

