BRODER Powder

BMG 625

Material Data Sheet

Material Description

Our metal powders have been specifically designed and optimized for use in Additive Manufacturing (AM) environments.

Our metal powders are successfully proven in AM and process well across the full spectrum of AM machines and technologies. The reason for this is our material has excellent melting and fusion properties in both PBF and EBM applications.

625 is a nickel superalloy which offers good strength and toughness throughout a wide temperature range. This grade is used in high temperature and high corrosion applications and also offers excellent fatigue strength.

Powder SEM

Part Sample

Material Properties

Good strength throughout wider temperature range
Good toughness
Corrosion resistance

Powder Properties	
Part no.	625
PSD	15-45 µm
Application	PBF
Part no.	625
PSD	20-53 µm
Application	PBF
Part no.	625
PSD	45-150 µm
Application	DED
Part no.	625
Application	45-106 µm
PSD	EBM
General Properties	
PSD	D10, D50, D90 reported
Apparent Density	Measured and Reported
Flow	Measured and Reported

Typical Applications

Gas turbines
Heat shields
Corrosion resistant applications

Relevant Sectors

Aerospace
Marine
Automotive

Chemical Composition	
Ni	Bal.
Cr	20-23
Mo	8-10
Fe	5.0 Max
Nb	3.15-4.15
Co	1.0 Max
Mn	0.5 Max
Si	0.5 Max
Al	0.4 Max
Ti	0.4 Max
C	0.1 Max
O	≤0.03
N	≤0.02
P	≤0.015
S	≤0.015

Nominal WT%

Industry Powder Names	
Generic name	625
Generic name	Alloy 625
Generic name	Nickel 625
GE Additive	Nickel 625
SLM Solutions	IN625
Renishaw	In625-0402
EOS	NickelAlloy IN625

Atomisation Process

Vaccum inert gas atomisation
Anti-satellite technology
Argon gas atomised

Powder Quality

Highly Spherical
Excellent flowability

Applicable Specification

ASTM F3056
Other specifications: DIN NiCr22Mo9Nb, UNS NO6625

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Physical Properties

Generic Data – Wrought Material	
Density	8.44 g/cm³
Thermal Conductivity	9.8 W//mK
Melting Point	1290°C - 1350°C
Coefficient of thermal expansion	12.8 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.

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.

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