

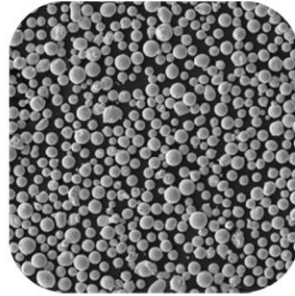
Material Description

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.

AISi10Mg is perfect for applications that require combination of lightweight complex shapes where good thermal properties are required. The combination of Silicon and Magnesium ensure this alloy offers increased strength and hardness more so than pure aluminium.

Powder SEM



Part Sample



Material Properties

Lightweight
High strength
High thermal conductivity
Very high electrical conductivity
Responds well to post processing finishing

Powder Properties	
Part no.	AISi10Mg
PSD	20-63 µm
Application	PBF

Typical Applications

Valves
Heat Exchanges
Electronics
Ducts

Chemical Composition	
Al	Bal.
Si	9.00 to 11.00
Mg	0.25 to 0.45
Fe	≤0.25
N	≤0.20
O	≤0.20
Ti	≤0.15
Zi	≤0.10
Mn	≤0.10
Ni	≤0.05
Cu	≤0.05
Pb	≤0.02
Sn	≤0.02

Nominal WT%

Relevant Sectors

Automotive
Aerospace
Defence

Industry Powder Names	
Generic name	AISi10Mg
GE Additive	AISi10Mg
SLM Solutions	Al-Alloy AISi10Mg
Renishaw	AISi10Mg
EOS	EOS Aluminium AISi10Mg

Atomisation Process

Vacuum inert gas atomisation
Anti-satellite technology
Argon gas atomised

Powder Quality

Highly Spherical
Excellent flowability

Applicable Specification

ASTM / AMS 7018
Other specifications: ASTM F3318, DIN EN 1706, EN AC-43000



Mechanical Properties		0.2% Yield Strength (MPa)	Tensile Strength (MPa)	Elongation In 4D (%)	E-modulus (GPa)	Hardness (HV)
As Built	Horizontal	211±2	334±1	19	71±2	103 HV0.5 ±5 HV0.5
	Vertical	174±4	339±6	15	66±3	98 HV0.5 ±5 HV0.5

*typical values

Physical Properties

Generic Data – Wrought Material	
Density	2.68 g/cm ³
Thermal Conductivity	130 W/mK to 190 W/mK
Melting Point	570°C - 590°C
Coefficient of thermal expansion	20 µm/mK to 21 µm/mK

*typical values

Heat Treatment

Heat treatment for AlSi10Mg is not applicable for strengthening. Other traditional processing techniques can be deployed including general machining, grinding etc.

Further information 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, 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

