

Material Description

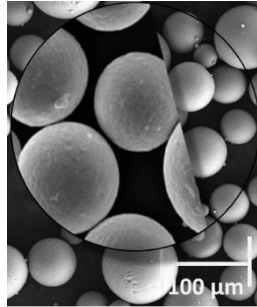
GMP Alloy-X metal powders have been specifically designed and optimised for use in Additive Manufacturing (AM).

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

GMP Alloy-X is a nickel superalloy which offers high strength and corrosion resistance. Often used in high temperature, high corrosion applications **GMP Alloy-X** delivers excellent strength.

Powder Images

Typical microscopy image of **GMP Alloy-X**



Powders are supplied in a variety of standard and custom sizes.

Part Example

Awaiting part image

Material Properties

- Excellent strength
- Heat resistance
- Corrosion resistance

Typical Applications

- Gas turbines
- Furnaces

Relevant Sectors

- Medical
- Marine
- Aerospace
- Industrial

Powder Properties

item no.	GMP Alloy-X -45+15		
PSD	15-45µm	Application	PBF
item no.	GMP Alloy-X -53+20		
PSD	20-53µm	Application	PBF
item no.	GMP Alloy-X -53+15		
PSD	15-53µm	Application	PBF
item no.	GMP Alloy-X -150+45		
PSD	45-150µm	Application	DED
item no.	GMP Alloy-X -106+45		
PSD	45-106µm	Application	EBM
item no.	GMP Alloy-X -300		
PSD	<300µm	Application	HIP
General Properties			
PSD	d10, d50, d90 reported		
Apparent Density	Measured and reported		
Flow	Measured and reported		

Chemical Composition

Ni	bal
Cr	20.5 – 23.5
Fe	17.0 – 20.0
Mo	8.0 – 10.0
Co	0.5 – 2.5
Mn	≤1.0
W	0.2 – 1.0
Al	≤0.5
Cu	≤0.5
Si	≤0.2
Ti	≤0.15
C	0.05 – 0.15
O	≤0.10
P	≤0.015
S	≤0.01
N	≤0.03

- wt%

Industry Powder Names

Generic name	Alloy X
Generic name	Hastelloy X
UNS	N06002
ASTM	B435
AMS	5536
SLM Solutions	HX
EOS	NickelAlloy HX

Atomisation Process

- Vacuum inert gas atomisation
- Anti-Satellite technology
- Argon gas atomised

Powder Quality

- Highly Spherical
- Very few satellites
- Excellent flowability

Applicable Specification

- AMS 7008
Other specifications: UNS N06002

Mechanical Properties*

Awaiting mechanical test data.

Physical Properties*

True Density	8.22 g/cm ³
Thermal Conductivity	9.2 W/mK
Melting Point	1260°C - 1355°C
Coefficient of thermal expansion	13.9 10 ⁻⁶ K ⁻¹

*typical data

Heat Treatment

HIP minimum requirements of 100 MPa at 1160°C for 4 hours. Note: part size will impact the ageing time required. Further information on heat treatment and stress relieving can be provided by our technical experts by contacting: gmp@globusmetalpowders.com

Contact

Globus Metal Powders is committed to providing our global customers with world-beating customer service through direct support, metallurgy and AM experts, and a family of authorised distribution partners.

Globus Metal Powders 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 includes steel, stainless steel, nickel, cobalt and bespoke alloys.

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Further information available at www.globusmetalpowders.com

Mechanical and physical properties are provided for guidance only and depict typically achievable properties and are not provided as guaranteed values or design data.

Results achieved can vary significantly depending on AM processes, parameters, and part design/geometry.

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