



# 316L AM

## MISSION-CRITICAL AND SAFETY-CONSCIOUS APPLICATIONS

### Material Description

**GMP 316L** metal powders have been specifically designed and optimised for use in Additive Manufacturing (AM).

**GMP 316L** metal powders are widely used and successfully proven in AM. **GMP 316L** powder processes well across the broad spectrum of AM machines and technologies due to their excellent flow and melting characteristics in PBF and EBM applications.

**GMP 316L** is an austenitic stainless steel with low C, N and O content, which offers good ductility and corrosion resistance. Often used in medical settings and where corrosion resistance is required, **GMP 316L** delivers excellent mechanical properties without requiring heat treatment.

Material Properties	Typical Applications	Relevant Sectors	Applicable Specification
Good corrosion resistance Good ductility High toughness	Surgical devices Corrosion resistant components Pumps Tooling	Medical Marine Aerospace Industrial	ASTM F3184, AMS7037 Relevant specifications: DIN 1.4404, ISO 5832-1, SAE J405 (316L), UNS S31600/S31603

### PSD

20-53µm - 15-53µm - 15-45µm - 45-150µm - 45-106µm  
 Custom PSD available on request

### APPLICATIONS

Laser Powder Bed Fusion(LPBF) - Direct Energy Deposition(DED)  
 Electron Beam Melting(EBM)

AEROSPACE & DEFENCE – ENERGY – MEDICAL – AUTOMOTIVE-  
 PRECISION ENGINEERING

YOUR GLOBAL LEADER IN GAS ATOMISED METAL POWDERS



Our range of metal powders for additive manufacturing is optimised for powder bed fusion, direct energy deposition and electron beam melting technologies. Deploying advanced processes including anti-satellite technology, Globus powders deliver excellent flowability and spreadability.

GENERAL PROPERTIES		Chemical Composition	Industry Powder Names
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PSD	d10, d50, d90 reported	<b>Fe</b>	<b>bal.</b>	316L
Apparent Density	Measured and reported	<b>Cr</b>	<b>16.0 - 18.0</b>	1.4404
Hall Flow	Measured and reported	<b>Ni</b>	<b>10.0 - 14.0</b>	SS316L
		<b>Mo</b>	<b>2.0 - 3.0</b>	1.4404 (316L)
		<b>Mn</b>	<b>≤2.0</b>	
		<b>Si</b>	<b>≤1.0</b>	
		<b>N</b>	<b>≤0.01</b>	
		<b>O</b>	<b>≤0.03</b>	
		<b>P</b>	<b>≤0.045</b>	
		<b>C</b>	<b>≤0.03</b>	
		<b>S</b>	<b>≤0.03</b>	

### Physical Properties\*

Generic Data – Wrought Material	
Density	7.99 g/cm <sup>3</sup>
Thermal Conductivity	16.2 W/mK
Melting Point	1371°C - 1399°C
Coefficient of thermal expansion	16 10 <sup>-6</sup> K <sup>-1</sup>

\*typical values

wt%	
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### Mechanical Properties

As Built		0.2% Yield Strength (MPa)	Tensile Strength (MPa)	Elongation (%)	E-modulus (GPa)	Impact Toughness (J)	Hardness (HRC)
		Horizontal					
	Vertical	430	525	873987	190	186	

### Heat Treatment

Heat treatment for **GMP 316L** is not recommended for strengthening. Other traditional post processing techniques can be deployed including general machining, grinding etc. Further information can be provided by our technical experts.

Atomisation Process	Powder Quality
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Vacuum inert gas atomisation	Highly Spherical
Anti-Satellite technology	Very few satellites
Argon gas atomised	Excellent flowability
AMS7002	Low oxygen, nitrogen
	High Apparent Density

### Contact

Globus Metal Powders is committed to providing customers with premium powder with guaranteed **Excellence in Every Particle** as well as direct customer support, including metallurgy and AM experts.

Our range of metal powders includes alloy steel, stainless steel, nickel & cobalt alloys.

Globus Metal Powders offers a diverse yet premium range of metal powders and alloys for Additive Manufacturing (AM) and Hot Isostatic Pressing (PM-HIP), along with next generation alloy development including custom grades.

Contact the Globus Metal Powders team for additional information or technical support.

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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**GMP HIP** Optimised For PM-HIP  
**GMP AM** Optimised For Additive Manufacturing  
**GMP Custom** Next Generation Alloy Development

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