

Metal powder for 3D-printing AMDAP™ Stainless steel

- AMDAP™ series are metal powders with excellent flowability suitable for SLM and DED 3D printers.
- SUS316L is a high-grade austenitic stainless steel that is superior to SUS304 in corrosion resistance, has good workability, and is non-magnetic.
- AMDAP™ SUS630 is a high-strength precipitation-hardened martensitic stainless steel with heat resistance and corrosion resistance equivalent to SUS304.

Powder lineup

■ Lineup of AMDAP™ stainless steel and typical chemical composition(mass%)

AMDAP Series	Equivalent steel grade	C	Si	Mn	Ni	Cr	Mo	V	Other	Major applications
AMDAP™ SUS316L	JIS SUS316L UNS S31603	0.02	0.5	0.20	13	17	2.5	–	–	General machinery parts
AMDAP™ SUS630	JIS SUS630 UNS S17400	0.02	0.5	0.50	4	17	–	–	Cu:4 Nb:0.3	General machinery parts

Particle size(μm)		Apparent density	Flow rate
-53/+25 (SLM)	-150/+53 (DED)	4.4 (g/cm ³)	13 (s/50g)

*Examples of physical characteristics of AMDAP™ SUS316L powder for SLM

3D-printing process parameters for SLM

	Laser power (W)	Laser spot diameter (μm)	Scanning speed (mm/s)	Hatching distance (mm)	Layer thickness (μm)
Inside	300	180	600	0.13	50
Contour	150	100	300	-	50

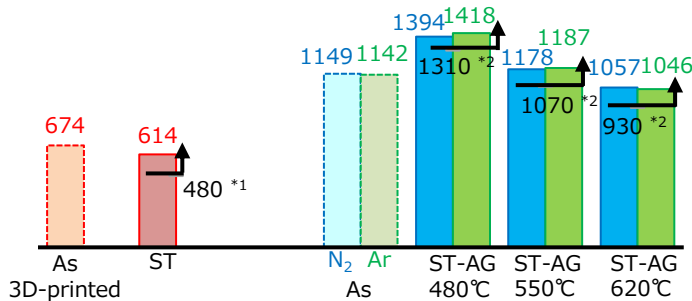
*established with Concept Laser (Colibrium Additive) M2

*recommended preheating temperature: 120 °C

Mechanical properties

3D-printed by Concept Laser (Colibrium Additive) M2.
Nitrogen and Argon are suitable for process gas.

Tensile strength (MPa)



*1 Lower limit of JIS G4303 standard

*2 Lower limit of ASTM A693 standard

Examples of 3D printing



Drinking vessel



Screw-shaped additive Manufacturing (DED)

オ-工場機器株式会社



Shachihoko (Mythical carp)