

316L stainless steel

Acier inoxydable austénitique

Characterized by its corrosion resistance and performance at both high and low temperatures, 316L is a fully austenitic stainless steel. It is used often in applications involving chemical processing, salt water environments, and household or industrial fixtures.

Composition initiale²

Preliminary composition²

Fe	Balance
Cr	16 - 18%
Ni	10 - 14%
Mo	2 - 3%
Mn	2.0% (max)
Si	1.0% (max)
C	0.045% (max)

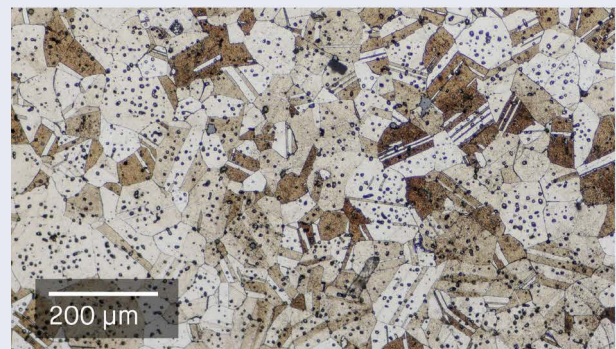
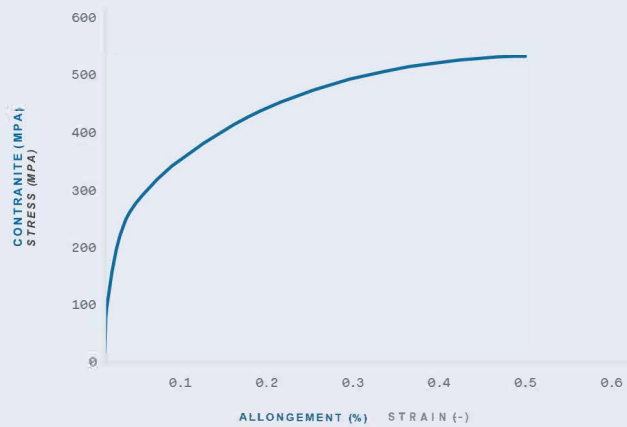
Propriétés mécaniques²

Mechanical properties²

	standard	Studio System™ as-sintered	MPIF 35-MIM ³ as-sintered (min)	Wrought ³ for reference
Limite élastique (MPa) Yield strength (MPa)	ASTM E8M	165	140	170
Résistance à la rupture (MPa) Ultimate tensile strength (MPa)	ASTM E8M	494	450	425
Allongement (%) Elongation at break	ASTM E8M	51%	40%	40%
Dureté (HRC) Hardness (HRC)	ASTM E18	67 (typ)	67 (typ)	95 (max)
Densité Density (relative)	ASTM B311	95%	95%	100%

Performance

			Autres désignations normalisées ⁶ Similar standard designations ⁶	
Boil test ⁵ (corrosion)	ASTM F1089	Pass	UNS	S31603
Copper sulfate test ⁵ (corrosion)	ASTM F1089	Pass	EN	1.4404



¹ Due to the material's high elongation, strain values were obtained from crosshead displacement. In conformance with ASTM E8M, total elongation was obtained from scribed marks on the gage length and yield strength was calculated from extensometer measurements.

² Properties shown reflect beta processing parameters.

³ Per MPIF Standard 35, Materials Standards for Metal Injection Molded Parts (MPIF 35-MIM, 2018).

⁴ Wrought values based on ASTM A240 standards.

⁵ Prior to corrosion resistance testing, all test samples were machined and passivated in accordance with ASTM F1089.

⁶ Listed designations are for reference purposes only. Composition and mechanical properties may vary.

End-use material performance is impacted (+/-) by certain factors including but not limited to part geometry and design, application and evaluation conditions, etc.