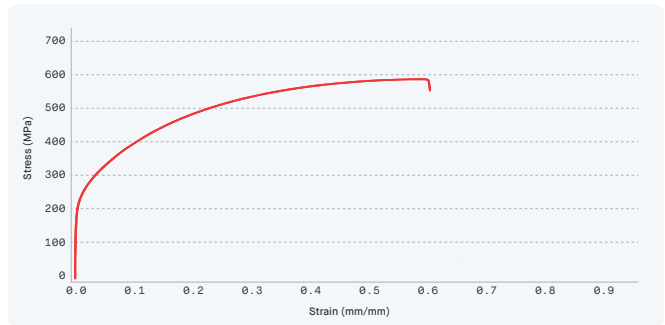


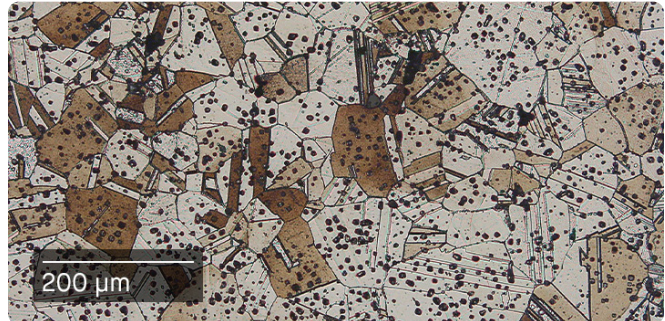
[Material Data Sheet]

316L v.2 Stainless Steel



COMPOSITION %

Fe	balance
Ni	10 - 14
Cr	16 - 18
Mo	2 - 3
Mn	2.0 (max)
Si	1.0 (max)
C	0.03 (max)



MECHANICAL PROPERTIES

	Standard	Studio System™ 2 As-Sintered	MIM - MPIF 35 Min ¹ As-Sintered	Wrought ² For reference
Ultimate tensile strength (MPa)	ASTM E8M	533	450	485
Yield strength (MPa)	ASTM E8M	169	140	170
Elongation (%)	ASTM E8M	66	40	40
Young's modulus - xy (GPa)	ASTM E111	180		
Hardness (HRB)	ASTM E18	66	67 (typ)	95 (max)
Density (relative)	ASTM B311	97%	95%	100%

PERFORMANCE³

	Standard	Studio System™ 2 As-Sintered
Boil test (corrosion)	ASTM F1089	Pass
Copper sulfate test (corrosion)	ASTM F1089	Pass

OTHER STANDARD DESIGNATIONS⁴

UNS S31603
EN 1.4404

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

2. Wrought values based on ASTM A240 standards.

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

4. 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.

Tensile properties and density data reported are mean values minus 1 sigma.

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.