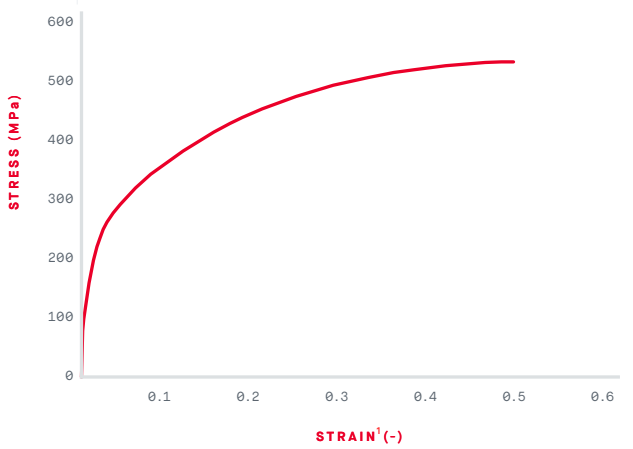
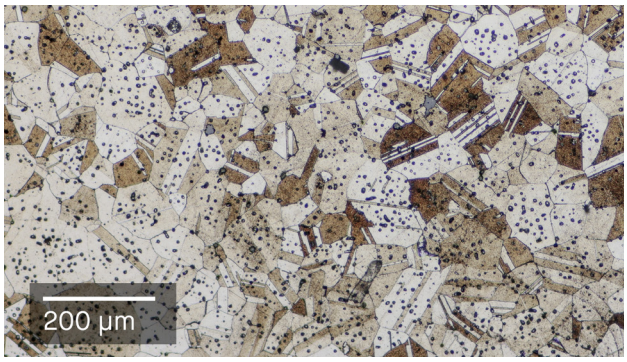
316L stainless steel

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.



Preliminary composition[2]

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



Mechanical properties

	per standard	**Studio System™** as-sintered	MPIF 35-MIM[3] as-sintered (min)	Wrought[4] for reference
Yield strength (MPa)	ASTM E8M	**165**	140	170
Ultimate tensile strength (MPa)	ASTM E8M	**494**	450	425
Elongation at break	ASTM E8M	**51%**	40%	40%
Hardness (HRB)	ASTM E18	**67 (typ)**	67 (typ)	95 (max)
Density (relative)	ASTM B311	**95%**	95%	100%

Performance

Boil test[5] (corrosion)	ASTM F1089	**Pass**
Copper sulfate test[5] (corrosion)	ASTM F1089	**Pass**

Similar standard designations[6]

UNS	S31603
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 mechnical 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.

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