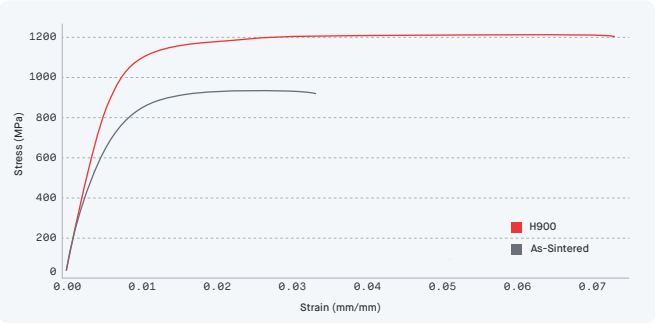
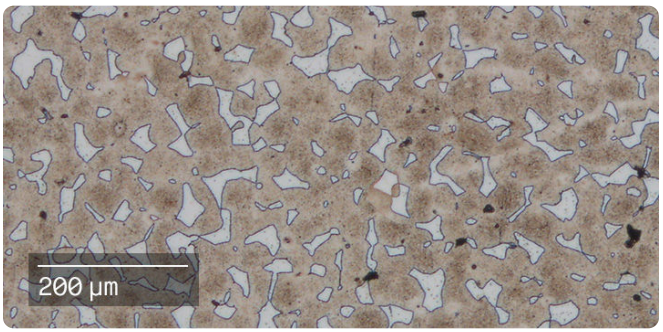
[Material Data Sheet]

17-4 PH
Stainless Steel



COMPOSITION %

C	0.07 (max)
Cr	15.5 - 17.5
Ni	3 - 5
Cu	3 - 5
Mn	1.0 (max)
Si	1.0 (max)
Nb + Ta	0.15 - 0.45
Fe	Balance



MECHANICAL PROPERTIES **

	Standard	Shop System™ As-Sintered	MIM - MPIF 35 min ** As-Sintered	Shop System™ H900 Heat Treat	MIM - MPIF 35 min ** H900 Heat Treat
Yield strength (MPa)	ASTM E8M	**660 ± 40**	650	**981 ± 50**	970
Ultimate tensile strength (MPa)	ASTM E8M	**912 ± 35**	790	**1205 ± 35**	1070
Elongation at break (%)	ASTM E8M	**5.9 ± 2**	4	**11.9 ± 5**	4
Young's modulus (GPa)	ASTM E8M	**178 ± 30**	190 (typ)	**185 ± 20**	190 (typ)
Hardness (HRC)	ASTM E18	**26.4 ± 1**	27 (typ)	**40.5 ± 2**	35 (typ)
Density (g/cc)	ASTM B311	**7.5 - 7.66**	7.5	**7.5 - 7.66**	7.5
Unnotched Charpy impact energy - xy (J)	MPIF59	**150 ± 8**	140 (typ)	**152 ± 5**	140 (typ)

SURFACE ROUGHNESS (@ 75 µM LAYER THICKNESS)

xy (µm Ra)	**4.1**
z (µm Ra)	**8.0**

OTHER STANDARD DESIGNATIONS *

UNS S17400

EN 1.4542

ISO 4542-174-00-I

* Listed designations are for reference purposes only. Composition and mechanical properties may vary.
** Per MPIF Standard 35, Materials Standards for Metal Injection Molded Parts (MPIF 35-MIM, 2018). 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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