

Data Sheet: Stainless Steel 17 - 4PH –1.4542



Martensitic microstructure with high chromium, moderate nickel and copper content and a low level of carbon and niobium providing excellent corrosion resistance, high strength and hardness as well as superior wear resistance. Widely used in the medical sector, the petrochemical industry, for food processing, and aerospace applications.

Material properties
High strength and wear resistance
Superior hardness
High corrosion resistance

Composition ¹											
Element	Fe	C	Cr	Ni	Cu	Mo	Si	Mn	Nb	S	P
Fraction (%)	Balance	≤0.07	16-17	4-5	3.5-4.5	≤0.3	≤1	≤1	≤0.15-0.45	≤0.03	≤0.035

Mechanical properties ²				
Value	Standard	Lithography-based Metal Manufacturing (LMM)	Metal Injection Molding(MIM) mininum ³	MIM typical ³
Yield strength [MPa]	ISO 6892	749	640	730
Ultimate strength [MPa]	ISO 6892	963	790	900
Elongation [%]	ISO 6892	9.8	4	6
Young's Modulus [GPa]	ISO 6892	196	-	190
HV30	ISO 6507	318	-	-
HRC ⁴	ASTME140	33	-	27
Density ⁵ [%]	-	-	-	95

1- Nominal values provided by the powder supplier.
2- Tensile samples type B according to ISO 2740.
3- As-sintered. Per MPIF Standard 35, Materials Standards for Metal Injection Molded Parts (MPIF35-MIM,2018).
4- Converted from HV.
5- With respect to a powder density of 7,76g/cm³ (Manufacturer information).

MAKERVERSE

Data Sheet: Stainless Steel 17 - 4PH –1.4542

Projector Data	
Lateral resolution*	35 µm- 726 dpi
Number of pixels (X, Y)	1600 x 2560
Light source	LED – WQXGA-chip

Projector Data	35 µm- 726 dpi
Lateral resolution*	1600 x 2560
Number of pixels (X, Y)	LED – WQXGA-chip
Light source	

*Other options for resolution and platform size available upon request.

Printer Data	
Platform size (X, Y)	56 mm x 89,6 mm
Max. build height (Z)	150 mm
Layer thickness	10 – 100 µm
Build speed	Up to 200 layers per hour Up to 100 cm³ per hour
Data format	Stl - binary