Material data sheet: 17-4 PH



Manufacturing Metal Binder Jetting - Desktop Metal Shop System process: Physical properties (±1σ) As sintered H900 HIP $Density^{(1)} (g/cm^3)$ 7.67 ± 0.054 7.77 (avg) 7.67 ± 0.025 Mechanical properties (±1σ) As sintered H900 H1150 HIP HIP+H900 Yield strength Rp 0.2% (MPa): 718 ± 36.5 1091 ± 43.9 707 ± 12.4 722 ± 12.5 1158 ± 10.7 Tensile strength Rm (MPa): 934 ± 37.3 1230 ± 54.4 |917 ± 11.3 | 980 ± 50.2 |1276 ± 14.8 Elongation at break (%) 12 ± 3.1 13 ± 0.7 |13 ± 3.0 9 ± 2.3 12 ± 2 **Geometrical data:** Layer thickness available 50 μm, 75 μm Typical part accuracy⁽²⁾ after first print/sinter ± 3% Part accuracy is highly dependent on part design and is typically improved through the application after 2 to 3 iterations ± 1% development phase. Surface roughness Sandblasted As sintered Ra (µm) 6 ± 0.8 9 ± 1.6 54 ± 7 40.5 ± 6 Rz (µm) Hardness (±1 σ) As sintered H900 H1150 Vickers Hardness (HV) 302 ± 8.6 415 ± 3.0 292 ± 0.8 Chemical analysis data (based on Aidro testing campaigns) Condition С S Ν 0 н AI AS SINTERED 0.023 < 0.002 0.0002 0.004 0.009 0.010 H900 0.020 0.004 0.010 < 0.002 0.002 0.0001

Condition	Cr	Р	Mn	Мо	Ni	Cu
AS SINTERED	16.61	0.03	0.49	0.22	4.31	3.89
Н900	16.64	0.03	0.50	0.24	4.33	3.92

Condition	Si	Ti	V
AS SINTERED	0.58	<0.01	0.05
Н900	0.59	0.01	0.05

Notes:

⁽¹⁾ Archimede's density according to ASTM B311.

⁽²⁾ Reference values only. In MBJ applications, part accuracy is improved through an iterative approach aiming at fine tuning scaling factors and calibrating distorsion compensation. Please reach to Aidro team to know more about part accuracy that can be reached via Metal Binder Jetting.