

forAM[®] 17-4PH 15-45 VG

Precipitation hardening stainless steel powder for Additive Manufacturing

forAM 17-4PH VG is a vacuum induction melted, argon gas atomized, and spherical powder for additive manufacturing. It is a martensitic precipitation hardening stainless steel with high strength and hardness, and good corrosion resistance.

Typical applications are in chemical process and oil equipment like flanges, valves and pumps, as well as aircraft parts.

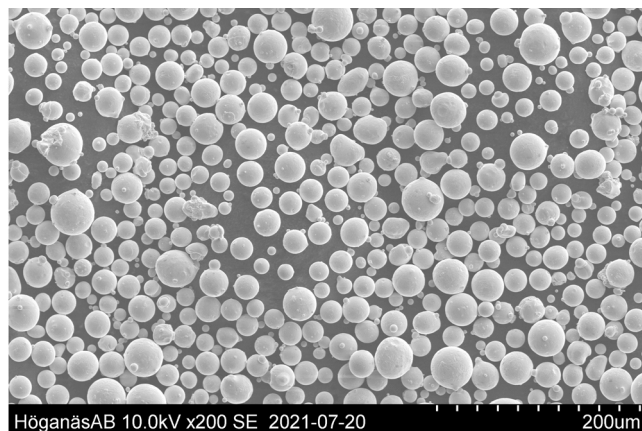
Equivalent materials:

- » X5CrNiCuNb17-4
- » UNS17400
- » 1.4542
- » SAE630

For more information on forAM product line and other of Höganäs products, please contact your local sales representative.

Powder properties

Chemical composition, (typical values)	
Element	Content, %
Cr	16
Ni	4
Cu	4
Mn	0.06
Nb+Ta	0.3
Si	0.1
C	0.01
Fe	Balance



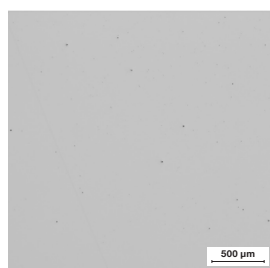
Typical powder properties		
Nominal particle range	15-45 μm (max 5% over and under size)	MPIF05, ASTM B214, ISO4497
Hall flow	15 s/50 g	MPIF03, ASTM B213, ISO4490
Apparent density	4.0 g/cm ³	MPIF04, ASTM B212, ISO3923/1

Mechanical properties

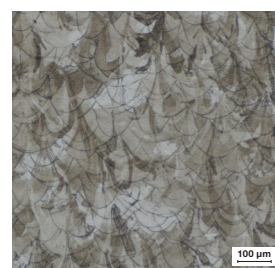
Surface condition is machined	
Heat treatment	H860 ⁽¹⁾
Printed in Z-direction – Build direction	
UTS (MPa)	1,260
YS (MPa)	1,170
Elongation (%)	12.5

Heat treatment	H860 ⁽¹⁾
Printed in X/Y-direction – Perpendicular	
UTS (MPa)	1,150
YS (MPa)	1,020
Elongation (%)	12.2
Hardness (HRC)	38

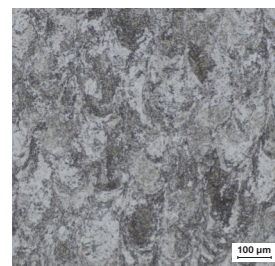
(1) Solution Annealed at 1,040°C for 1 h in Ar followed by gas quench,
Precipitation hardened at 460°C in Ar



As polished



As Printed – Build direction



Heat Treated – Build direction

Standard packaging:

30 kg (6x5 kg), 2.5 L PE bottles packed in cardboard box)

200 kg / 500 kg Flexbag

(Other tailored particle sizes and packaging are available under conditions)