

Material Type							
AISI 630	S17400			1.4548			
Characteristics							
<p>Solid wire designed for 3D-printing of martensitic stainless steel structured of type 17-4PH (ASTM A564 – S17400 “Type 630”) for precipitation-hardening. The alloy offers a combination of high strength with a corrosion resistance comparable to that of 304 stainless steels.</p> <p>Depending upon the requirements (mechanical properties) the structures can be used as printed, as printed and precipitation hardened or solution annealed and precipitation hardened. Solution annealed and precipitation-hardened components can be cold deformed by bending with a mandrel of 5 x component thickness. The alloy is magnetic in all conditions.</p> <p>Typical applications are structural parts in aerospace, food industry, valves for paper mill equipment.</p>							
Typical analysis of the solid wire (wt.-%)							
	C	Si	Mn	Cr	Ni	Cu	Nb
wt.-%	0.02	0.35	0.45	16.3	4.6	3.3	0.25
Typical mechanical properties							
Heat treatment	Yield strength $R_{p0.2}$	Tensile strength $R_m$	Elongation ( $L_0=5d_0$ )	Hardness	Fracture toughness Kv [J]		
	MPa	MPa	%	HV 10	20 °C	-60 °C	
u	940	970	3	330	55	-	
hardened	950	1020	17	305	-	50	
u	untreated, as printed – Shielding gas Ar + 2,5 % CO <sub>2</sub>						
hardened	1040 °C – 1 h, air cooled to RT, 620 °C – 4 h, air cooled						
Available products							
Diameter:	1,0 mm – 1,2 mm						
Package:	BS300 15 kg – ECOdrum 100 – ECOdrum 250 – S760 300						
Other diameters and packages on request.							