

17-4 PH Stainless Steel

17-4 PH STAINLESS STEEL DATASHEET

17-4PH stainless steel is chromium-nickel-copper stainless steel used for applications requiring high strength, high toughness, good corrosion resistance and high fatigue resistance. 17-4PH stainless steel is a Martensitic, precipitation-hardening stainless steel. The material is solution annealed (condition A) by heating to 1900F and rapidly cooling. It can then be single or double aged at appropriate time and temperature to increase the tensile properties as shown in the table below.

17-4PH stainless steel is used in the production of oilfield tools such as rotors, utilized in nuclear components, aerospace parts and many applications requiring high strength and corrosion resistance. Specialty Steel Supply can offer this grade in round bar and heavy plate. We can cut to length or water jet cut to your exact requirements utilizing our 5-axis system. We have in-house capability to straighten, turn, grind, and polish.



Standards

- UNS S17400

Physical Properties

- Density: 0.280 lb/in³ (7.8 g/cm³)
- Melting Point: 2560 - 2625°F (1404 – 1440°C)
- Modulus of Elasticity: 28.5 X 10⁶ psi / 197 GPa

Characteristics

- High fatigue resistance.
- Good resistance to corrosion, similar to Grade 304.
- High strength.
- Readily weldable.

Chemical Composition

	C	Mn	S	P	Si	Cr	Ni	Cb	Cu	Mo
MIN	-	-	-	-	-	15.00	3.00	5 X C	3.00	-
MAX	0.07	1.00	0.03	0.04	1.00	17.50	5.00	0.45	5.00	0.50

* As per AMS 5604

Mechanical Properties

Condition	Tensile (min) KSI	0.2% Yield (min) KSI	Elongation (min) %	Reduction of Area (min) %	Hardness Brinell (Rockwell)	Charpy Impact (Min) Ft-Lbs
Condition A	185	160	3%	-	-	-
H900	190	170	10%	35%	420 (C44)	15
H925	170	155	10%	35%	409 (C42)	25
H1025	155	145	12%	40%	352 (C38)	35
H1075	145	125	13%	45%	341 (C36)	40
H1100	140	115	14%	45%	332 (C35)	45
H1150	135	105	16%	50%	311 (C33)	50
H1150M	125	85	22%	68%	277 (C27)	100

* Mechanical properties as shown in ASTM A564

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