



## 17-4PH

**Description:** Stainless Steel 17-4 PH is a pre-alloyed stainless steel in fine powder form. The 17-4 PH stainless steel may be hardened by a precipitation-hardening heat treatment. Excellent mechanical properties at a high strength level may be obtained by such treatment. This material machines well and has excellent welding characteristics. The combination of excellent mechanical and processing properties makes this grade adaptable to a wide variety of applications.

**Applications:**  
-Used where high strength and good corrosion resistance are required.  
-Applications requiring high fatigue strength, good resistance to galling, seizing and stress corrosion.  
-Suitable for intricate parts requiring machining and welding.

**Composition:**

Carbon (C) = max. 0.07%	Manganese (Mn) = max. 1.00%
Silicon (Si) = max. 1.00%	Phosphorus (P) = max. 0.040%
Sulfur (S) = max. 0.030%	Chromium (Cr) = 15.00—17.50%
Nickel (Ni) = 3.00—5.00%	Molybdenum (Mo) = 2.00—3.00%
Copper (Cu) = (3.00—5.00wt%)	Tantalum (Ta) plus Niobium (Nb) = 0.15—0.45%
Iron (Fe) = Balance	

**Stress Relief:** Stress Relieve at 1900°F for 2 hours in a vacuum.

**Hot Isostatic Pressing:** (OPTIONAL) -- HIP at 1900°F for 4 hours.

**Solution Heat Treatment:** (OPTIONAL) -- Solution heat treat at 1900°F for 2 hours in a vacuum.  
Follow by 6 bars (or higher) argon gas quench below 90°F.

<b>17-4 SR &amp; SHT</b>	DMLS	AMS 5604/5643	Typical Wrought
YS(ksi)	112.9	160 Max	110-145
UTS (ksi)	154.7	185 Max.	150-160
Elongation (%)	12.1	3 Min.	5-8
Hardness (HRC)	28	39 Max.	33
<b>17-4 H900</b>	DMLS	AMS 5604/5643	Typical Wrought
YS(ksi)	183.1	170 Min.	180-200
UTS (ksi)	206.3	190 Min.	195-210
Elongation (%)	11.8	5-10 Min.	7-15
Hardness (HRC)	43	40-47	43-45
<b>17-4 H1025</b>	DMLS	AMS 5604/5643	Typical Wrought
YS(ksi)	163.6	145 Min.	150-170
UTS (ksi)	171.1	155 Min.	165-185
Elongation (%)	12.8	5-12 Min.	8-16
Hardness (HRC)	36	35-42	36-38
<b>17-4 H1150</b>	DMLS	AMS 5604/5643	Typical Wrought
YS(ksi)	140.2	105 Min.	125-135
UTS (ksi)	152.9	135Min.	145-155
Elongation (%)	13.2	8-16 Min.	10-20
Hardness (HRC)	33	28-37	28-33

**The data presented above has been collected by MTI, and is proprietary information of MTI. These properties are representative of hardware produced on MTI machines using proprietary processing practices. Materials produced on other machines are likely to differ.**