



Stainless Steel 17-4 PH® Precipitation Hardening Stainless Steel, Condition H 900

Stainless Steel 17-4 PH® provides an outstanding combination of high strength, good corrosion resistance, good mechanical properties at temperatures up to 600°F (316°C), and good toughness in both base metal and welds. Short-time, low-temperature heat treatments minimize distortion and scaling. This alloy is widely used in the aerospace, biomedical tools, chemical, petrochemical, food processing, paper and general metalworking industries. The material supplied from the mill is in Condition A. After fabrication eight standard heat treatments have been developed to provide a wide range of properties. * UNS S17400

Physical Properties	Metric	English	Comments
Density	7.80 g/cc	0.282 lb/in ³	
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	45	45	
Tensile Strength, Ultimate	1448 MPa	210000 psi	
Tensile Strength, Yield	1379 MPa	200000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	7.0 %	7.0 %	in 2 inches
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000770 ohm-cm	0.0000770 ohm-cm	
Thermal Properties	Metric	English	Comments
CTE, linear	10.8 µm/m-°C	6.00 µin/in-°F	
	@Temperature 21.0 - 93.0 °C	@Temperature 69.8 - 199 °F	
	11.7 µm/m-°C	6.50 µin/in-°F	
	@Temperature <=427 °C	@Temperature <=801 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	
Thermal Conductivity	17.9 W/m-K	124 BTU-in/hr-ft ² -°F	
	@Temperature 149 °C	@Temperature 300 °F	
	22.6 W/m-K	157 BTU-in/hr-ft ² -°F	
	@Temperature 482 °C	@Temperature 900 °F	
Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.070 %	<= 0.070 %	
Chromium, Cr	15 - 17.5 %	15 - 17.5 %	
Copper, Cu	3.0 - 5.0 %	3.0 - 5.0 %	
Iron, Fe	69.91 - 78.85 %	69.91 - 78.85 %	As Remainder
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Nb + Ta	0.15 - 0.45 %	0.15 - 0.45 %	
Nickel, Ni	3.0 - 5.0 %	3.0 - 5.0 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error.

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