

# HAYNES<sup>®</sup> 617 alloy

## Physical Properties

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Physical Property	British Units		Metric Units	
Density	RT	0.302 lb/in <sup>3</sup>	RT	8.36 g/cm <sup>3</sup>
Melting Range	2430-2510°F	-	1330-1375°C	-
Thermal Conductivity	400°F	113 BTU-in/ft <sup>2</sup> -hr-°F	200°C	16.2 W/m-°C
	800°F	137 BTU-in/ft <sup>2</sup> -hr-°F	400°C	19.4 W/m-°C
	1000°F	149 BTU-in/ft <sup>2</sup> -hr-°F	500°C	20.9 W/m-°C
	1200°F	161 BTU-in/ft <sup>2</sup> -hr-°F	600°C	22.5 W/m-°C
	1400°F	173 BTU-in/ft <sup>2</sup> -hr-°F	700°C	24.0 W/m-°C
	1600°F	185 BTU-in/ft <sup>2</sup> -hr-°F	800°C	25.6 W/m-°C
	1800°F	197 BTU-in/ft <sup>2</sup> -hr-°F	900°C	26.1 W/m-°C
	2000°F	209 BTU-in/ft <sup>2</sup> -hr-°F	1000°C	28.7 W/m-°C
Mean Coefficient of Thermal Expansion	70-800°F	7.6 μin/in -°F	20-450°C	13.7 μm/m-°C
	70-1000°F	7.7 μin/in -°F	20-500°C	13.8 μm/m-°C
	70-1200°F	8.0 μin/in -°F	20-600°C	14.2 μm/m-°C
	70-1400°F	8.4 μin/in -°F	20-700°C	14.7 μm/m-°C
	70-1600°F	8.7 μin/in -°F	20-800°C	15.3 μm/m-°C
	70-1800°F	9.0 μin/in -°F	20-900°C	15.8 μm/m-°C
	70-2000°F	9.2 μin/in -°F	20-1000°C	16.2 μm/m-°C
Electrical Resistivity	70°F	48.1 μohm-in	21°C	122 μohm-cm
	400°F	49.5 μohm-in	200°C	126 μohm-cm
	800°F	50.3 μohm-in	400°C	128 μohm-cm
	1000°F	51.5 μohm-in	500°C	130 μohm-cm
	1200°F	52.4 μohm-in	600°C	131 μohm-cm
	1400°F	52.8 μohm-in	700°C	133 μohm-cm
	1600°F	52.7 μohm-in	800°C	134 μohm-cm
	1800°F	53.9 μohm-in	900°C	134 μohm-cm
Dynamic Modulus of Elasticity	70°F	30.6 x 10 <sup>6</sup> psi	20°C	211 GPa
	400°F	29.0 x 10 <sup>6</sup> psi	200°C	201 GPa
	800°F	26.9 x 10 <sup>6</sup> psi	400°C	188 GPa
	1000°F	25.8 x 10 <sup>6</sup> psi	500°C	180 GPa
	1200°F	24.6 x 10 <sup>6</sup> psi	600°C	173 GPa
	1400°F	23.3 x 10 <sup>6</sup> psi	700°C	166 GPa
	1600°F	21.9 x 10 <sup>6</sup> psi	800°C	157 GPa
	1800°F	20.5 x 10 <sup>6</sup> psi	900°C	148 GPa
	2000°F	18.8 x 10 <sup>6</sup> psi	1000°C	139 GPa

