

HAYNES® HR-160® alloy

Physical Properties

Physical Property	British Units		Metric Units	
Density	RT	0.292 lb/in. ³	RT	8.08 g/cm. ³
Electrical Resistivity	RT	43.8 μohm.in	RT	111.2 μohm.cm
	200°F	44.3 μohm.in	100°C	112.8 μohm.cm
	400°F	45.2 μohm.in	200°C	114.7 μohm.cm
	600°F	46.1 μohm.in	300°C	116.7 μohm.cm
	800°F	46.9 μohm.in	400°C	118.6 μohm.cm
	1000°F	47.8 μohm.in	500°C	120.6 μohm.cm
	1200°F	48.3 μohm.in	600°C	122.4 μohm.cm
	1400°F	48.6 μohm.in	700°C	123.1 μohm.cm
	1600°F	48.9 μohm.in	800°C	123.8 μohm.cm
	1800°F	49.3 μohm.in	900°C	124.5 μohm.cm
	2000°F	49.6 μohm.in	1000°C	125.2 μohm.cm
	2200°F	49.9 μohm.in	1100°C	125.9 μohm.cm
	-	-	1200°C	126.7 μohm.cm
Thermal Diffusivity	RT	4.6 x 10 ⁻³ in ² /s	RT	29.4 x 10 ⁻³ cm ² /s
	200°F	4.8 x 10 ⁻³ in ² /s	100°C	30.8 x 10 ⁻³ cm ² /s
	400°F	5.2 x 10 ⁻³ in ² /s	200°C	33.6 x 10 ⁻³ cm ² /s
	600°F	5.8 x 10 ⁻³ in ² /s	300°C	37.0 x 10 ⁻³ cm ² /s
	800°F	6.4 x 10 ⁻³ in ² /s	400°C	40.6 x 10 ⁻³ cm ² /s
	1000°F	7.0 x 10 ⁻³ in ² /s	500°C	44.3 x 10 ⁻³ cm ² /s
	1200°F	7.2 x 10 ⁻³ in ² /s	600°C	45.6 x 10 ⁻³ cm ² /s
	1400°F	7.4 x 10 ⁻³ in ² /s	700°C	47.2 x 10 ⁻³ cm ² /s
	1600°F	7.5 x 10 ⁻³ in ² /s	800°C	48.6 x 10 ⁻³ cm ² /s
	1800°F	7.8 x 10 ⁻³ in ² /s	900°C	48.7 x 10 ⁻³ cm ² /s
	2000°F	8.4 x 10 ⁻³ in ² /s	1000°C	50.9 x 10 ⁻³ cm ² /s
	2200°F	8.8 x 10 ⁻³ in ² /s	1100°C	54.1 x 10 ⁻³ cm ² /s
	-	-	1200°C	56.1 x 10 ⁻³ cm ² /s
Thermal Conductivity	RT	75 Btu.in/h.ft ² .°F	RT	10.9 W/m-°C
	200°F	82 Btu.in/h.ft ² .°F	100°C	12.0 W/m-°C
	400°F	95 Btu.in/h.ft ² .°F	200°C	13.6 W/m-°C
	600°F	108 Btu.in/h.ft ² .°F	300°C	15.4 W/m-°C
	800°F	126 Btu.in/h.ft ² .°F	400°C	17.6 W/m-°C
	1000°F	144 Btu.in/h.ft ² .°F	500°C	19.9 W/m-°C
	1200°F	162 Btu.in/h.ft ² .°F	600°C	21.8 W/m-°C
	1400°F	178 Btu.in/h.ft ² .°F	700°C	24.7 W/m-°C
	1600°F	185 Btu.in/h.ft ² .°F	800°C	26.1 W/m-°C
	1800°F	196 Btu.in/h.ft ² .°F	900°C	26.9 W/m-°C
	2000°F	213 Btu.in/h.ft ² .°F	1000°C	28.7 W/m-°C
	2200°F	228 Btu.in/h.ft ² .°F	1100°C	31.1 W/m-°C
	-	-	1200°C	32.9 W/m-°C

Specific Heat	RT	0.110 Btu/lb.°F	RT	462 J/kg-°C
	200°F	0.116 Btu/lb.°F	100°C	487 J/kg-°C
	400°F	0.121 Btu/lb.°F	200°C	506 J/kg-°C
	600°F	0.125 Btu/lb.°F	300°C	521 J/kg-°C
	800°F	0.131 Btu/lb.°F	400°C	542 J/kg-°C
	1000°F	0.136 Btu/lb.°F	500°C	562 J/kg-°C
	1200°F	0.151 Btu/lb.°F	600°C	597 J/kg-°C
	1400°F	0.159 Btu/lb.°F	700°C	653 J/kg-°C
	1600°F	0.165 Btu/lb.°F	800°C	672 J/kg-°C
	1800°F	0.167 Btu/lb.°F	900°C	689 J/kg-°C
	2000°F	0.171 Btu/lb.°F	1000°C	704 J/kg-°C
	2200°F	0.175 Btu/lb.°F	1100°C	719 J/kg-°C
	-	-	1200°C	732 J/kg-
	Mean Coefficient of Thermal Expansion	78-200°F	7.2 $\mu\text{in/in-}^\circ\text{F}$	25-100°C
78-400°F		7.6 $\mu\text{in/in-}^\circ\text{F}$	25-200°C	13.7 $\mu\text{m/m-}^\circ\text{C}$
78-600°F		7.9 $\mu\text{in/in-}^\circ\text{F}$	25-300°C	14.0 $\mu\text{m/m-}^\circ\text{C}$
78-800°F		8.1 $\mu\text{in/in-}^\circ\text{F}$	25-400°C	14.4 $\mu\text{m/m-}^\circ\text{C}$
78-1000°F		8.3 $\mu\text{in/in-}^\circ\text{F}$	25-500°C	14.9 $\mu\text{m/m-}^\circ\text{C}$
78-1200°F		8.6 $\mu\text{in/in-}^\circ\text{F}$	25-600°C	15.5 $\mu\text{m/m-}^\circ\text{C}$
78-1400°F		8.9 $\mu\text{in/in-}^\circ\text{F}$	25-700°C	15.7 $\mu\text{m/m-}^\circ\text{C}$
78-1600°F		9.2 $\mu\text{in/in-}^\circ\text{F}$	25-800°C	16.6 $\mu\text{m/m-}^\circ\text{C}$
78-1800°F		9.5 $\mu\text{in/in-}^\circ\text{F}$	25-900°C	17.1 $\mu\text{m/m-}^\circ\text{C}$
Dynamic Modulus of Elasticity	RT	30.6 x 10 ⁶ psi	RT	211 GPa
	100°F	30.5 x 10 ⁶ psi	50°C	210 GPa
	200°F	30.1 x 10 ⁶ psi	100°C	207 GPa
	300°F	29.6 x 10 ⁶ psi	150°C	204 GPa
	400°F	29.1 x 10 ⁶ psi	200°C	201 GPa
	500°F	28.6 x 10 ⁶ psi	250°C	198 GPa
	600°F	27.8 x 10 ⁶ psi	300°C	193 GPa
	700°F	27.1 x 10 ⁶ psi	350°C	189 GPa
	800°F	26.5 x 10 ⁶ psi	400°C	185 GPa
	900°F	26.1 x 10 ⁶ psi	450°C	182 GPa
	1000°F	25.6 x 10 ⁶ psi	500°C	179 GPa
	1100°F	25.1 x 10 ⁶ psi	550°C	176 GPa
	1200°F	24.4 x 10 ⁶ psi	600°C	173 GPa
	1300°F	23.7 x 10 ⁶ psi	650°C	168 GPa
	1400°F	22.9 x 10 ⁶ psi	700°C	163 GPa
	1500°F	22.4 x 10 ⁶ psi	750°C	159 GPa
	1600°F	21.7 x 10 ⁶ psi	800°C	155 GPa
	1700°F	21.1 x 10 ⁶ psi	850°C	151 GPa
	1800°F	19.8 x 10 ⁶ psi	900°C	147 GPa
-	-	950°C	266 GPa	

RT= Room Temperature