HAYNES® 25 alloy

Physical Properties

Physical Property	British Units		Metric Units	
Density	RT	0.327 lb/in^3	RT	9.07 g/cm^3
Melting Range	2425-2570°F	-	1330-1410°C	-
Electrical Resistivity	RT	34.9 µohm-in	RT	88.6 µohm-cm
	200°F	35.9 µohm-in	100°C	91.8 µohm-cm
	400°F	37.6 µohm-in	200°C	95.6 µohm-cm
	600°F	38.5 µohm-in	300 °C	97.6 µohm-cm
	800°F	39.1 µohm-in	400 °C	98.5 µohm-cm
	1000°F	40.4 µohm-in	500 °C	100.8 µohm-cm
	1200°F	41.8 µohm-in	600 °C	104.3 µohm-cm
	1400°F	42.3 µohm-in	700 °C	106.6 µohm-cm
	1600°F	40.6 µohm-in	800 °C	107.8 µohm-cm
	1800°F	37.7 µohm-in	900 °C	101.1 µohm-cm
	-	-	1000 °C	95.0 µohm-cm
Thermal Diffusivity	70°F	4.4 x 10-3in^2/sec	RT	28.3 x 10^{-3}cm^2/sec
	125°F	4.6 x 10-3in^2/sec	100°C	30.1 x 10^{-3}cm^2/sec
	200°F	4.8 x 10-3in^2/sec	200°C	32.7 x 10^{-3}cm^2/sec
	400°F	5.5 x 10-3in^2/sec	300°C	35.6 x 10^{-3}cm^2/sec
	600°F	6.0 x 10-3in^2/sec	400°C	41.2 x 10^{-3}cm^2/sec
	800°F	6.5 x 10-3in^2/sec	500°C	43.5 x 10^{-3}cm^2/sec
	1000°F	6.9 x 10-3in^2/sec	600°C	45.5 x 10^{-3}cm^2/sec
	1200°F	7.3 x 10-3in^2/sec	700°C	47.6 x 10^{-3}cm^2/sec
	1400°F	7.6 x 10-3in^2/sec	800°C	49.6 x 10^{-3}cm^2/sec
	1600°F	7.7 x 10-3in^2/sec	900°C	48.7 x 10^{-3}cm^2/sec
	1800°F	7.9 x 10-3in^2/sec	1000°C	51.6 x 10^{-3}cm^2/sec
	2000°F	8.3 x 10-3in^2/sec	-	-
Thermal Conductivity	70°F	72 Btu-in/ft^2-h-°F	25°C	10.5 W/m-°C
	125°F	77 Btu-in/ft^2-h-°F	100°C	12.0 W/m-°C
	200°F	83 Btu-in/ft^2-h-°F	200°C	14.0 W/m-°C
	400°F	99 Btu-in/ft^2-h-°F	300°C	15.9 W/m-°C
	600°F	114 Btu-in/ft^2-h-°F	400°C	17.7 W/m-°C
	800°F	127 Btu-in/ft^2-h-°F	500°C	19.5 W/m-°C
	1000°F	140 Btu-in/ft^2-h-°F	600°C	21.2 W/m-°C
	1200°F	152 Btu-in/ft^2-h-°F	700°C	22.9 W/m-°C
	1400°F	165 Btu-in/ft^2-h-°F	800°C	24.5 W/m-°C
	1600°F	178 Btu-in/ft^2-h-°F	900°C	26.0 W/m-°C
	1800°F	191 Btu-in/ft^2-h-°F	1000°C	27.5 W/m-°C
	2000°F	201 Btu-in/ft^2-h-°F	-	-
	70°F	0.096 Btu/lb.-°F	25°C	403 J/kg-°C
	125 °F	0.098 Btu/lb.-°F	100 °C	424 J/kg-°C
	200 °F	0.101 Btu/lb.-°F	200 °C	445 J/kg-°C

Specific Heat	400 °F	0.106 Btu/lb.-°F	300 °C	455 J/kg-°C
	600°F	0.111 Btu/lb.-°F	400 °C	462 J/kg-°C
	800 °F	0.116 Btu/lb.-°F	500 °C	495 J/kg-°C
	1000 °F	0.119 Btu/lb.-°F	600 °C	508 J/kg-°C
	1200 °F	0.123 Btu/lb.-°F	700 °C	582 J/kg-°C
	1400 °F	0.128 Btu/lb.-°F	800 °C	592 J/kg-°C
	1600 °F	0.137 Btu/lb.-°F	900 °C	596 J/kg-°C
	1800 °F	0.143 Btu/lb.-°F	1000 °C	598 J/kg-°C
	2000 °F	0.142 Btu/lb.-°F	-	-
Mean Coefficient of Thermal Expansion	70 - 200 °F	7.1 µin/in.-°F	25 - 100 °C	12.8 µm/m-°C
	70 - 400 °F	7.3 µin/in.-°F	25 - 200 °C	13.1 µm/m-°C
	70 - 600 °F	7.5 µin/in.-°F	25 - 300 °C	13.3 µm/m-°C
	70 - 800 °F	7.7 µin/in.-°F	25 - 400 °C	13.7 µm/m-°C
	70 - 1000 °F	7.9 µin/in.-°F	25 - 500 °C	14.0 µm/m-°C
	70 - 1200 °F	8.2 µin/in.-°F	25 - 600 °C	14.6 µm/m-°C
	70 - 1400 °F	8.6 µin/in.-°F	25 - 700 °C	15.1 µm/m-°C
	70 - 1600 °F	8.9 µin/in.-°F	25 - 800 °C	15.8 µm/m-°C
	70 - 1800 °F	9.2 µin/in.-°F	25 - 900 °C	16.2 µm/m-°C
	70 - 2000 °F	9.5 µin/in.-°F	25 - 1000 °C	16.7 µm/m-°C
Dynamic Modulus of Elasticity	RT	32.6 x 10^6psi	RT	225 GPa
	200°F	32.3 x 10^6psi	100°C	222 GPa
	400°F	31.0 x 10^6psi	200°C	214 GPa
	600°F	29.4 x 10^6psi	300°C	204 GPa
	800°F	28.3 x 10^6psi	400°C	197 GPa
	1000°F	26.9 x 10^6psi	500°C	188 GPa
	1200°F	25.8 x 10^6psi	600°C	181 GPa
	1400°F	24.3 x 10^6psi	700°C	174 GPa
	1600°F	22.8 x 10^6psi	800°C	163 GPa
	1800°F	21.4 x 10^6psi	900°C	154 GPa
	-	-	1000°C	146 Gpa

RT=Room Temperature