

HAYNES[®] 214[®] alloy

Physical Properties

| Physical Property | British Units | | Metric Units | |
|------------------------|---------------|---|--------------|--|
| Density | RT | 0.291 lb/in ³ | RT | 8.05 g/cm ³ |
| Melting Range | 2475-2550°F | - | 1355-1400°C | - |
| Electrical Resistivity | RT | 53.5 μohm-in | RT | 135.9 μohm-cm |
| | 200°F | 53.9 μohm-in | 100°C | 136.9 μohm-cm |
| | 400°F | 53.9 μohm-in | 200°C | 136.9 μohm-cm |
| | 600°F | 53.9 μohm-in | 300°C | 136.9 μohm-cm |
| | 800°F | 54.3 μohm-in | 400°C | 137.7 μohm-cm |
| | 1000°F | 54.3 μohm-in | 500°C | 137.9 μohm-cm |
| | 1200°F | 53.5 μohm-in | 600°C | 136.8 μohm-cm |
| | 1400°F | 51.6 μohm-in | 700°C | 133.7 μohm-cm |
| | 1600°F | 49.6 μohm-in | 800°C | 129.2 μohm-cm |
| | 1800°F | 48.0 μohm-in | 900°C | 124.9 μohm-cm |
| | 1900°F | 47.6 μohm-in | 1000°C | 121.6 μohm-cm |
| | 2000°F | 47.6 μohm-in | 1050°C | 120.9 μohm-cm |
| | 2100°F | 48.0 μohm-in | 1100°C | 121.0 μohm-cm |
| | 2200°F | 48.4 μohm-in | 1150°C | 121.9 μohm-cm |
| | - | - | 1200°C | 122.9 μohm-cm |
| Thermal Conductivity | RT | 83 Btu-in/ft ² -hr-°F | RT | 12.0 W/m-°C |
| | 200°F | 88 Btu-in/ft ² -hr-°F | 100°C | 12.8 W/m-°C |
| | 400°F | 99 Btu-in/ft ² -hr-°F | 200°C | 14.2 W/m-°C |
| | 600°F | 112 Btu-in/ft ² -hr-°F | 300°C | 15.9 W/m-°C |
| | 800°F | 132 Btu-in/ft ² -hr-°F | 400°C | 18.4 W/m-°C |
| | 1000°F | 153 Btu-in/ft ² -hr-°F | 500°C | 21.1 W/m-°C |
| | 1200°F | 175 Btu-in/ft ² -hr-°F | 600°C | 23.9 W/m-°C |
| | 1400°F | 200 Btu-in/ft ² -hr-°F | 700°C | 26.9 W/m-°C |
| | 1600°F | 215 Btu-in/ft ² -hr-°F | 800°C | 29.7 W/m-°C |
| | 1800°F | 225 Btu-in/ft ² -hr-°F | 900°C | 31.4 W/m-°C |
| | 2000°F | 234 Btu-in/ft ² -hr-°F | 1000°C | 32.7 W/m-°C |
| | 2200°F | 255 Btu-in/ft ² -hr-°F | 1100°C | 34.0 W/m-°C |
| | - | - | 1200°C | 36.7 W/m-°C |
| Thermal Diffusivity | RT | 5.2 x 10 ⁻³ in ² /sec | RT | 33.6 x 10 ⁻³ cm ² /sec |
| | 200°F | 5.7 x 10 ⁻³ in ² /sec | 100 | 34.5 x 10 ⁻³ cm ² /sec |
| | 400°F | 6.2 x 10 ⁻³ in ² /sec | 200 | 36.6 x 10 ⁻³ cm ² /sec |
| | 600°F | 6.8 x 10 ⁻³ in ² /sec | 300 | 39.4 x 10 ⁻³ cm ² /sec |
| | 800°F | 7.5 x 10 ⁻³ in ² /sec | 400 | 43.2 x 10 ⁻³ cm ² /sec |
| | 1000°F | 7.9 x 10 ⁻³ in ² /sec | 500 | 47.2 x 10 ⁻³ cm ² /sec |
| | 1200°F | 8.1 x 10 ⁻³ in ² /sec | 600 | 49.5 x 10 ⁻³ cm ² /sec |
| | 1400°F | 8.2 x 10 ⁻³ in ² /sec | 700 | 52.9 x 10 ⁻³ cm ² /sec |
| | 1600°F | 8.4 x 10 ⁻³ in ² /sec | 800 | 51.7 x 10 ⁻³ cm ² /sec |
| | 1800°F | 9.1 x 10 ⁻³ in ² /sec | 900 | 53.3 x 10 ⁻³ cm ² /sec |
| | 2000°F | 9.4 x 10 ⁻³ in ² /sec | 1000 | 54.2 x 10 ⁻³ cm ² /sec |
| | 2175°F | 5.2 x 10 ⁻³ in ² /sec | 1100 | 58.6 x 10 ⁻³ cm ² /sec |
| | - | - | 1200 | 61.2 x 10 ⁻³ cm ² /sec |

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| Specific Heat | RT | 0.108 Btu/lb.-°F | RT | 452 J/Kg-°C |
| | 200°F | 0.112 Btu/lb.-°F | 100°C | 470 J/Kg-°C |
| | 400°F | 0.118 Btu/lb.-°F | 200°C | 493 J/Kg-°C |
| | 600°F | 0.124 Btu/lb.-°F | 300°C | 515 J/Kg-°C |
| | 800°F | 0.130 Btu/lb.-°F | 400°C | 538 J/Kg-°C |
| | 1000°F | 0.136 Btu/lb.-°F | 500°C | 561 J/Kg-°C |
| | 1200°F | 0.154 Btu/lb.-°F | 600°C | 611 J/Kg-°C |
| | 1400°F | 0.166 Btu/lb.-°F | 700°C | 668 J/Kg-°C |
| | 1600°F | 0.173 Btu/lb.-°F | 800°C | 705 J/Kg-°C |
| | 1800°F | 0.177 Btu/lb.-°F | 900°C | 728 J/Kg-°C |
| | 1900°F | 0.178 Btu/lb.-°F | 1000°C | 742 J/Kg-°C |
| | 2000°F | 0.179 Btu/lb.-°F | 1100°C | 749 J/Kg-°C |
| | 2200°F | 0.180 Btu/lb.-°F | 1200°C | 753 J/Kg-°C |
| | Mean Coefficient of Thermal Expansion | 70-400°F | 7.4 $\mu\text{in/in-}^\circ\text{F}$ | 25-200°C |
| 70-600°F | | 7.6 $\mu\text{in/in-}^\circ\text{F}$ | 25-300°C | 13.6 $\mu\text{m/m-}^\circ\text{C}$ |
| 70-800°F | | 7.9 $\mu\text{in/in-}^\circ\text{F}$ | 25-400°C | 14.1 $\mu\text{m/m-}^\circ\text{C}$ |
| 70-1000°F | | 8.2 $\mu\text{in/in-}^\circ\text{F}$ | 25-500°C | 14.6 $\mu\text{m/m-}^\circ\text{C}$ |
| 70-1200°F | | 8.6 $\mu\text{in/in-}^\circ\text{F}$ | 25-600°C | 15.2 $\mu\text{m/m-}^\circ\text{C}$ |
| 70-1400°F | | 9.0 $\mu\text{in/in-}^\circ\text{F}$ | 25-700°C | 15.8 $\mu\text{m/m-}^\circ\text{C}$ |
| 70-1600°F | | 9.6 $\mu\text{in/in-}^\circ\text{F}$ | 25-800°C | 16.6 $\mu\text{m/m-}^\circ\text{C}$ |
| 70-1800°F | | 10.2 $\mu\text{in/in-}^\circ\text{F}$ | 25-900°C | 17.6 $\mu\text{m/m-}^\circ\text{C}$ |
| 70-2000°F | | 11.1 $\mu\text{in/in-}^\circ\text{F}$ | 25-1000°C | 18.6 $\mu\text{m/m-}^\circ\text{C}$ |
| - | - | 25-1100°C | 20.2 $\mu\text{m/m-}^\circ\text{C}$ | |
| Dynamic Modulus of Elasticity | RT | 31.6 x 10 ⁶ psi | RT | 218 GPa |
| | 200°F | 30.6 x 10 ⁶ psi | 100°C | 210 GPa |
| | 400°F | 29.6 x 10 ⁶ psi | 200°C | 204 GPa |
| | 600°F | 28.7 x 10 ⁶ psi | 300°C | 199 GPa |
| | 800°F | 27.4 x 10 ⁶ psi | 400°C | 190 GPa |
| | 1000°F | 25.3 x 10 ⁶ psi | 500°C | 184 GPa |
| | 1200°F | 23.9 x 10 ⁶ psi | 600°C | 177 GPa |
| | 1400°F | 22.3 x 10 ⁶ psi | 700°C | 170 GPa |
| | 1600°F | 20.2 x 10 ⁶ psi | 800°C | 162 GPa |
| | 1800°F | 19.0 x 10 ⁶ psi | 900°C | 151 GPa |
| | - | - | 1000°C | 137 GPa |

RT = Room Temperature