

Haynes 214® alloy, 40% cold reduction

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Intended principally for use at temperatures of 955°C and above, exhibits resistance to oxidation that exceeds virtually all conventional heat-resistant wrought alloys. Applications include mesh belts, trays, and fixtures for firing of pottery and fine china, and the heat treatment of electronic devices and technical grade ceramics, used for foil construction honeycomb seals, combustor splash plates, and other static oxidation-limited parts, catalytic converter internals, burner cup material in auxiliary heaters for military vehicles, refractory anchors, furnace flame hoods, and rotary calciners for processing chloride compounds, and as hospital waste incinerator internals. Data provided by the manufacturer, Haynes International, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Haynes-214-alloy-40-cold-reduction.php

Physical Properties	Metric	English	Comments
Density	8.05 g/cc	0.291 lb/in ³	at RT

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	393	393	Converted from Rockwell C hardness.
Hardness, Knoop	430	430	Converted from Rockwell C hardness.
Hardness, Rockwell C	42.4	42.4	
Hardness, Vickers	415	415	Converted from Rockwell C hardness.
Tensile Strength, Ultimate	1440 MPa	209000 psi	
Tensile Strength, Yield	1265 MPa	183500 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	5.3 %	5.3 %	in 50.8 mm
Modulus of Elasticity	218 GPa	31600 ksi	RT
	137 GPa	19900 ksi	
	@Temperature 1000 °C	@Temperature 1830 °F	
	151 GPa	21900 ksi	
	@Temperature 900 °C	@Temperature 1650 °F	
	162 GPa	23500 ksi	
	@Temperature 800 °C	@Temperature 1470 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	177 GPa	25700 ksi	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	184 GPa	26700 ksi	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	190 GPa	27600 ksi	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	199 GPa	28900 ksi	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	204 GPa	29600 ksi	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	210 GPa	30500 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	13.3 Âµm/m-Â°C	7.39 Âµin/in-Â°F	
	@Temperature 25.0 - 200 Â°C	@Temperature 77.0 - 392 Â°F	
	13.6 Âµm/m-Â°C	7.56 Âµin/in-Â°F	
	@Temperature 25.0 - 300 Â°C	@Temperature 77.0 - 572 Â°F	
	14.1 Âµm/m-Â°C	7.83 Âµin/in-Â°F	
	@Temperature 25.0 - 400 Â°C	@Temperature 77.0 - 752 Â°F	
	14.6 Âµm/m-Â°C	8.11 Âµin/in-Â°F	
	@Temperature 25.0 - 500 Â°C	@Temperature 77.0 - 932 Â°F	
	15.2 Âµm/m-Â°C	8.44 Âµin/in-Â°F	
	@Temperature 25.0 - 600 Â°C	@Temperature 77.0 - 1110 Â°F	
	15.8 Âµm/m-Â°C	8.78 Âµin/in-Â°F	
	@Temperature 25.0 - 700 Â°C	@Temperature 77.0 - 1290 Â°F	

Thermal Properties	Metric	English	Comments
	@Temperature 25.0 - 800 Å°C	@Temperature 77.0 - 1470 Å°F	
	17.6 Åµm/m-Å°C	9.78 Åµin/in-Å°F	
	@Temperature 25.0 - 900 Å°C	@Temperature 77.0 - 1650 Å°F	
	18.6 Åµm/m-Å°C	10.3 Åµin/in-Å°F	
	@Temperature 25.0 - 1000 Å°C	@Temperature 77.0 - 1830 Å°F	
Specific Heat Capacity	0.452 J/g-Å°C	0.108 BTU/lb-Å°F	RT
	0.470 J/g-Å°C	0.112 BTU/lb-Å°F	
	@Temperature 100 Å°C	@Temperature 212 Å°F	
	0.493 J/g-Å°C	0.118 BTU/lb-Å°F	
	@Temperature 200 Å°C	@Temperature 392 Å°F	
	0.515 J/g-Å°C	0.123 BTU/lb-Å°F	
	@Temperature 300 Å°C	@Temperature 572 Å°F	
	0.538 J/g-Å°C	0.129 BTU/lb-Å°F	
	@Temperature 400 Å°C	@Temperature 752 Å°F	
	0.561 J/g-Å°C	0.134 BTU/lb-Å°F	
	@Temperature 500 Å°C	@Temperature 932 Å°F	
	0.611 J/g-Å°C	0.146 BTU/lb-Å°F	
	@Temperature 600 Å°C	@Temperature 1110 Å°F	
	0.668 J/g-Å°C	0.160 BTU/lb-Å°F	
	@Temperature 700 Å°C	@Temperature 1290 Å°F	
	0.705 J/g-Å°C	0.168 BTU/lb-Å°F	
	@Temperature 800 Å°C	@Temperature 1470 Å°F	
	0.728 J/g-Å°C	0.174 BTU/lb-Å°F	
	@Temperature 900 Å°C	@Temperature 1650 Å°F	
	0.742 J/g-Å°C	0.177 BTU/lb-Å°F	
	@Temperature 1000 Å°C	@Temperature 1830 Å°F	

Thermal Properties	0.749 J/g-Â°C Metric	0.179 BTU/lb-Â°F English	Comments
	@Temperature 1100 Â°C	@Temperature 2010 Â°F	
	0.753 J/g-Â°C	0.180 BTU/lb-Â°F	
	@Temperature 1200 Â°C	@Temperature 2190 Â°F	
Thermal Conductivity	12.0 W/m-K	83.3 BTU-in/hr-ftÂ²- Â°F	RT
	12.8 W/m-K	88.8 BTU-in/hr-ftÂ²- Â°F	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	14.2 W/m-K	98.5 BTU-in/hr-ftÂ²- Â°F	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	15.9 W/m-K	110 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	18.4 W/m-K	128 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	21.1 W/m-K	146 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	23.9 W/m-K	166 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	26.9 W/m-K	187 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	29.7 W/m-K	206 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	31.4 W/m-K	218 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0001359 ohm-cm	0.0001359 ohm-cm	RT
	0.0001209 ohm-cm	0.0001209 ohm-cm	

Electrical Properties	@Temperature 1050 Metric °C	@Temperature 1920 English °F	Comments
	0.000121 ohm-cm	0.000121 ohm-cm	
	@Temperature 1100 °C	@Temperature 2010 °F	
	0.0001216 ohm-cm	0.0001216 ohm-cm	
	@Temperature 1000 °C	@Temperature 1830 °F	
	0.0001219 ohm-cm	0.0001219 ohm-cm	
	@Temperature 1150 °C	@Temperature 2100 °F	
	0.0001229 ohm-cm	0.0001229 ohm-cm	
	@Temperature 1200 °C	@Temperature 2190 °F	
	0.0001249 ohm-cm	0.0001249 ohm-cm	
	@Temperature 900 °C	@Temperature 1650 °F	
	0.0001292 ohm-cm	0.0001292 ohm-cm	
	@Temperature 800 °C	@Temperature 1470 °F	
	0.0001337 ohm-cm	0.0001337 ohm-cm	
	@Temperature 700 °C	@Temperature 1290 °F	
	0.0001368 ohm-cm	0.0001368 ohm-cm	
	@Temperature 600 °C	@Temperature 1110 °F	
	0.0001369 ohm-cm	0.0001369 ohm-cm	
	@Temperature 100 °C	@Temperature 212 °F	
	0.0001369 ohm-cm	0.0001369 ohm-cm	
	@Temperature 200 °C	@Temperature 392 °F	
	0.0001369 ohm-cm	0.0001369 ohm-cm	
	@Temperature 300 °C	@Temperature 572 °F	
	0.0001369 ohm-cm	0.0001369 ohm-cm	
	@Temperature 300 °C	@Temperature 572 °F	
	0.0001377 ohm-cm	0.0001377 ohm-cm	
	@Temperature 400 °C	@Temperature 752 °F	

Electrical Properties	0.0001379 ohm-cm Metric	0.0001379 ohm-cm English	Comments
	@Temperature 500 Â°C	@Temperature 932 Â°F	

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