

Haynes 718 alloy, cold rolled, solution-treated and aged sheet

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Cb and Ta content combined weight percentage of 5. Excellent high-temperature strength up to 650°C, good ductility, formability, and weldability. Very good welding characteristics. Applications include a variety of fabricated component applications in both aircraft and land-based turbine engines including rings, casings, and many types of formed sheet metal components; also used for fasteners and instrumentation parts, also various applications for oil/gas well down hole and well head components. Data provided by the manufacturer, Haynes International, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Haynes-718-alloy-cold-rolled-solution-treated-and-aged-sheet.php

Physical Properties	Metric	English	Comments
Density	8.23 g/cc	0.297 lb/in ³	at RT

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1395 MPa	202300 psi	
	77.0 MPa	11200 psi	
	@Temperature 1095 °C	@Temperature 2003 °F	
	145 MPa	21000 psi	
	@Temperature 980 °C	@Temperature 1800 °F	
	420 MPa	60900 psi	
	@Temperature 870 °C	@Temperature 1600 °F	
	855 MPa	124000 psi	
@Temperature 760 °C	@Temperature 1400 °F		
1130 MPa	164000 psi		
@Temperature 540 °C	@Temperature 1000 °F		
1155 MPa	167500 psi		
@Temperature 650 °C	@Temperature 1200 °F		
Tensile Strength, Yield	1175 MPa	170400 psi	
	@Strain 0.200 %	@Strain 0.200 %	
	40.0 MPa	5800 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 0.200 %, Temperature 1095 Â°C	@Strain 0.200 %, Temperature 2003 Â°F	
	90.0 MPa	13100 psi	
	@Strain 0.200 %, Temperature 980 Â°C	@Strain 0.200 %, Temperature 1800 Â°F	
	305 MPa	44200 psi	
	@Strain 0.200 %, Temperature 870 Â°C	@Strain 0.200 %, Temperature 1600 Â°F	
	750 MPa	109000 psi	
	@Strain 0.200 %, Temperature 760 Â°C	@Strain 0.200 %, Temperature 1400 Â°F	
	995 MPa	144000 psi	
	@Strain 0.200 %, Temperature 540 Â°C	@Strain 0.200 %, Temperature 1000 Â°F	
	1000 MPa	145000 psi	
	@Strain 0.200 %, Temperature 650 Â°C	@Strain 0.200 %, Temperature 1200 Â°F	
Elongation at Break	22.3 %	22.3 %	in 50.8 mm
	10.2 %	10.2 %	in 50.8 mm
	@Temperature 760 Â°C	@Temperature 1400 Â°F	
	19.9 %	19.9 %	in 50.8 mm
	@Temperature 650 Â°C	@Temperature 1200 Â°F	
	24.4 %	24.4 %	in 50.8 mm
	@Temperature 540 Â°C	@Temperature 1000 Â°F	
	27.7 %	27.7 %	in 50.8 mm
	@Temperature 870 Â°C	@Temperature 1600 Â°F	
	37 %	37 %	in 50.8 mm
	@Temperature 980 Â°C	@Temperature 1800 Â°F	
	38.5 %	38.5 %	in 50.8 mm
	@Temperature 1095 Â°C	@Temperature 2003 Â°F	
Modulus of Elasticity	200 GPa	29000 ksi	RT

Mechanical Properties	Metric	English	Comments
	@Temperature 1000 Â°C	@Temperature 1830 Â°F	
	134 GPa	19400 ksi	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	
	149 GPa	21600 ksi	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	159 GPa	23100 ksi	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	167 GPa	24200 ksi	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	173 GPa	25100 ksi	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	179 GPa	26000 ksi	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	185 GPa	26800 ksi	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	191 GPa	27700 ksi	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	199 GPa	28900 ksi	
	@Temperature 100 Â°C	@Temperature 212 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear	12.8 Âµm/m-Â°C	7.11 Âµin/in-Â°F	
	@Temperature 25.0 - 100 Â°C	@Temperature 77.0 - 212 Â°F	
	13.5 Âµm/m-Â°C	7.50 Âµin/in-Â°F	
	@Temperature 25.0 - 200 Â°C	@Temperature 77.0 - 392 Â°F	
	13.8 Âµm/m-Â°C	7.67 Âµin/in-Â°F	
	@Temperature 25.0 - 300 Â°C	@Temperature 77.0 - 572 Â°F	

Thermal Properties	Metric $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	English $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	Comments
	@Temperature 25.0 - 400 Å°C	@Temperature 77.0 - 752 Å°F	
	14.3 Å $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	7.94 Å $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 25.0 - 500 Å°C	@Temperature 77.0 - 932 Å°F	
	14.8 Å $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	8.22 Å $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 25.0 - 600 Å°C	@Temperature 77.0 - 1110 Å°F	
	15.5 Å $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	8.61 Å $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 25.0 - 700 Å°C	@Temperature 77.0 - 1290 Å°F	
	16.3 Å $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	9.06 Å $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 25.0 - 800 Å°C	@Temperature 77.0 - 1470 Å°F	
	17.2 Å $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	9.56 Å $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 25.0 - 900 Å°C	@Temperature 77.0 - 1650 Å°F	
Thermal Conductivity	11.4 W/m-K	79.1 BTU-in/hr-ftÅ²-Å°F	RT
	12.6 W/m-K	87.4 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 100 Å°C	@Temperature 212 Å°F	
	14.3 W/m-K	99.2 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 200 Å°C	@Temperature 392 Å°F	
	15.9 W/m-K	110 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 300 Å°C	@Temperature 572 Å°F	
	17.5 W/m-K	121 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 400 Å°C	@Temperature 752 Å°F	
	19.0 W/m-K	132 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 500 Å°C	@Temperature 932 Å°F	
	20.6 W/m-K	143 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 600 Å°C	@Temperature 1110 Å°F	
	22.2 W/m-K	154 BTU-in/hr-ftÅ²-Å°F	

Thermal Properties	@Temperature 700 Â°C Metric	@Temperature 1290 English	Comments
	23.8 W/m-K	165 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	25.4 W/m-K	176 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	
	27.1 W/m-K	188 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 1000 Â°C	@Temperature 1830 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.50 %	0.50 %	
Boron, B	0.0090 %	0.0090 %	
Carbon, C	0.050 %	0.050 %	
Chromium, Cr	18 %	18 %	
Cobalt, Co	<= 1.0 %	<= 1.0 %	
Copper, Cu	<= 0.10 %	<= 0.10 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000121 ohm-cm	0.000121 ohm-cm	RT
	0.000122 ohm-cm	0.000122 ohm-cm	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	0.000125 ohm-cm	0.000125 ohm-cm	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	0.000127 ohm-cm	0.000127 ohm-cm	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	0.000129 ohm-cm	0.000129 ohm-cm	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	0.000130 ohm-cm	0.000130 ohm-cm	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	0.000132 ohm-cm	0.000132 ohm-cm	

Electrical Properties	@Temperature 600 Â°C Metric	@Temperature 1110 English	Comments
	0.000132 ohm-cm	0.000132 ohm-cm	
	@Temperature 700 Â°C	@Temperature 1290 Â°F	
	0.000132 ohm-cm	0.000132 ohm-cm	
	@Temperature 800 Â°C	@Temperature 1470 Â°F	
	0.000133 ohm-cm	0.000133 ohm-cm	
	@Temperature 900 Â°C	@Temperature 1650 Â°F	
	0.000133 ohm-cm	0.000133 ohm-cm	
	@Temperature 1000 Â°C	@Temperature 1830 Â°F	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China