

Haynes Ultimet® alloy, 1.6 mm sheet

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

Material Notes:

Co content as balance, excellent corrosion resistance, outstanding wear resistance, high tensile strength combined with excellent impact toughness and ductility. Ideal welding material with exceptional ductility and resistance to weld cracking, very easy to apply as an overlay, multiple layers applicable with little to no preheat. Applications include agitators, blenders, bolts, dies, extruders, fan blades, filters, glass plungers, nozzles, pumps, rolls, screw conveyors, and valve parts. Data provided by the manufacturer, Haynes International, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Haynes-Ultimet-alloy-16-mm-sheet.php

Physical Properties	Metric	English	Comments
Density	8.47 g/cc	0.306 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	952 MPa	138000 psi	
	827 MPa	120000 psi	
	@Temperature 427 Â°C	@Temperature 801 Â°F	
	896 MPa	130000 psi	
	@Temperature 316 Â°C	@Temperature 601 Â°F	
Tensile Strength, Yield	924 MPa	134000 psi	
	@Temperature 204 Â°C	@Temperature 399 Â°F	
	931 MPa	135000 psi	
	@Temperature 93.0 Â°C	@Temperature 199 Â°F	
	496 MPa	71900 psi	
@Strain 0.200 %	@Strain 0.200 %		
Tensile Strength, Yield	283 MPa	41000 psi	
	@Strain 0.200 %, Temperature 427 Â°C	@Strain 0.200 %, Temperature 801 Â°F	
	296 MPa	42900 psi	
	@Strain 0.200 %, Temperature 316 Â°C	@Strain 0.200 %, Temperature 601 Â°F	
	310 MPa	45000 psi	
@Strain 0.200 %, Temperature 204 Â°C	@Strain 0.200 %, Temperature 399 Â°F		

Mechanical Properties	400 MPa Metric	58000 psi English	Comments
	@Strain 0.200 %, Temperature 93.0 °C	@Strain 0.200 %, Temperature 199 °F	
Elongation at Break	42 %	42 %	in 50.8 mm
	50 % @Temperature 93.0 °C	50 % @Temperature 199 °F	in 50.8 mm
	62 % @Temperature 204 °C	62 % @Temperature 399 °F	in 50.8 mm
	75 % @Temperature 316 °C	75 % @Temperature 601 °F	in 50.8 mm
	76 % @Temperature 427 °C	76 % @Temperature 801 °F	in 50.8 mm
Modulus of Elasticity	180 GPa @Temperature 649 °C	26100 ksi @Temperature 1200 °F	(heat treated at 1121°C (2050°F), water quenched plate)
	189 GPa @Temperature 538 °C	27400 ksi @Temperature 1000 °F	(heat treated at 1121°C (2050°F), water quenched plate)
	197 GPa @Temperature 427 °C	28600 ksi @Temperature 801 °F	(heat treated at 1121°C (2050°F), water quenched plate)
	206 GPa @Temperature 316 °C	29900 ksi @Temperature 601 °F	(heat treated at 1121°C (2050°F), water quenched plate)
	215 GPa @Temperature 204 °C	31200 ksi @Temperature 399 °F	(heat treated at 1121°C (2050°F), water quenched plate)
Charpy Impact	176 J @Temperature 23.0 °C	130 ft-lb @Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 µm/m-°C @Temperature 26.0 - 316 °C	7.78 µin/in-°F @Temperature 78.8 - 601 °F	
	14.5 µm/m-°C @Temperature 26.0 -	8.06 µin/in-°F @Temperature 78.8 -	

Thermal Properties	427 °C Metric	801 °F English	Comments
	14.8 Åµm/m-Å°C	8.22 Åµin/in-Å°F	
	@Temperature 26.0 - 538 Å°C	@Temperature 78.8 - 1000 Å°F	
	15.1 Åµm/m-Å°C	8.39 Åµin/in-Å°F	
	@Temperature 26.0 - 649 Å°C	@Temperature 78.8 - 1200 Å°F	
	15.9 Åµm/m-Å°C	8.83 Åµin/in-Å°F	
	@Temperature 26.0 - 760 Å°C	@Temperature 78.8 - 1400 Å°F	
	16.4 Åµm/m-Å°C	9.11 Åµin/in-Å°F	
	@Temperature 26.0 - 871 Å°C	@Temperature 78.8 - 1600 Å°F	
	16.9 Åµm/m-Å°C	9.39 Åµin/in-Å°F	
	@Temperature 26.0 - 982 Å°C	@Temperature 78.8 - 1800 Å°F	
Specific Heat Capacity	0.456 J/g-Å°C	0.109 BTU/lb-Å°F	
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
	0.470 J/g-Å°C	0.112 BTU/lb-Å°F	
	@Temperature 100 Å°C	@Temperature 212 Å°F	
	0.482 J/g-Å°C	0.115 BTU/lb-Å°F	
	@Temperature 200 Å°C	@Temperature 392 Å°F	
	0.504 J/g-Å°C	0.120 BTU/lb-Å°F	
	@Temperature 300 Å°C	@Temperature 572 Å°F	
Thermal Conductivity	0.525 J/g-Å°C	0.125 BTU/lb-Å°F	
	@Temperature 400 Å°C	@Temperature 752 Å°F	
	0.545 J/g-Å°C	0.130 BTU/lb-Å°F	
	@Temperature 500 Å°C	@Temperature 932 Å°F	
	0.573 J/g-Å°C	0.137 BTU/lb-Å°F	
	@Temperature 600 Å°C	@Temperature 1110 Å°F	
	12.3 W/m-K	85.4 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	

Thermal Properties	Metric	English	Comments
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	15.6 W/m-K	108 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	17.5 W/m-K	121 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	19.4 W/m-K	135 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	21.5 W/m-K	149 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	
Melting Point	1332 - 1354 Â°C	2430 - 2469 Â°F	
Solidus	1332 Â°C	2430 Â°F	
Liquidus	1354 Â°C	2469 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.060 %	0.060 %	
Chromium, Cr	26 %	26 %	
Cobalt, Co	54 %	54 %	
Iron, Fe	3.0 %	3.0 %	
Manganese, Mn	0.80 %	0.80 %	
Molybdenum, Mo	5.0 %	5.0 %	
Nickel, Ni	9.0 %	9.0 %	
Nitrogen, N	0.080 %	0.080 %	
Silicon, Si	0.30 %	0.30 %	
Tungsten, W	2.0 %	2.0 %	

Electrical Properties	Metric	English	Comments
	0.0000870 ohm-cm	0.0000870 ohm-cm	

Electrical Properties	Metric	English	Comments
	@ Temperature 23.0 Â°C	@ Temperature 73.4 Â°F	
	0.0000890 ohm-cm	0.0000890 ohm-cm	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	0.0000930 ohm-cm	0.0000930 ohm-cm	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	0.0000960 ohm-cm	0.0000960 ohm-cm	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
	0.000100 ohm-cm	0.000100 ohm-cm	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
	0.000103 ohm-cm	0.000103 ohm-cm	
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	0.000105 ohm-cm	0.000105 ohm-cm	
	@Temperature 600 Â°C	@Temperature 1110 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