

Haynes Ultimet® alloy, 12.7-50.8 mm bar

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-127-508-mm-bar.php

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

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1014 MPa	147100 psi	
	793 MPa	115000 psi	
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
	903 MPa	131000 psi	
	@Temperature 427 Â°C	@Temperature 801 Â°F	
	910 MPa	132000 psi	
Tensile Strength, Yield	@Temperature 316 Â°C	@Temperature 601 Â°F	
	965 MPa	140000 psi	
	@Temperature 93.0 Â°C	@Temperature 199 Â°F	
	965 MPa	140000 psi	
	@Temperature 204 Â°C	@Temperature 399 Â°F	
	524 MPa	76000 psi	
Tensile Strength, Yield	@Strain 0.200 %	@Strain 0.200 %	
	276 MPa	40000 psi	
	@Strain 0.200 %, Temperature 538 Â°C	@Strain 0.200 %, Temperature 1000 Â°F	
Tensile Strength, Yield	296 MPa	42900 psi	
	@Strain 0.200 %, Temperature 427 Â°C	@Strain 0.200 %, Temperature 801 Â°F	

Mechanical Properties	303 MPa Metric	43900 psi English	Comments
	@Strain 0.200 %, Temperature 316 Â°C	@Strain 0.200 %, Temperature 601 Â°F	
	359 MPa	52100 psi	
	@Strain 0.200 %, Temperature 204 Â°C	@Strain 0.200 %, Temperature 399 Â°F	
	483 MPa	70100 psi	
	@Strain 0.200 %, Temperature 93.0 Â°C	@Strain 0.200 %, Temperature 199 Â°F	
Elongation at Break	38 %	38 %	in 50.8 mm
	49 %	49 %	in 50.8 mm
	@Temperature 93.0 Â°C	@Temperature 199 Â°F	
	66 %	66 %	in 50.8 mm
	@Temperature 204 Â°C	@Temperature 399 Â°F	
	77 %	77 %	in 50.8 mm
	@Temperature 316 Â°C	@Temperature 601 Â°F	
	79 %	79 %	in 50.8 mm
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
	84 %	84 %	in 50.8 mm
	@Temperature 427 Â°C	@Temperature 801 Â°F	
Modulus of Elasticity	180 GPa	26100 ksi	(heat treated at 1121Â°C (2050Â°F), water quenched plate)
	@Temperature 649 Â°C	@Temperature 1200 Â°F	
	189 GPa	27400 ksi	(heat treated at 1121Â°C (2050Â°F), water quenched plate)
	@Temperature 538 Â°C	@Temperature 1000 Â°F	
	197 GPa	28600 ksi	(heat treated at 1121Â°C (2050Â°F), water quenched plate)
	@Temperature 427 Â°C	@Temperature 801 Â°F	
	206 GPa	29900 ksi	(heat treated at 1121Â°C (2050Â°F), water quenched plate)
	@Temperature 316 Â°C	@Temperature 601 Â°F	
	215 GPa	31200 ksi	(heat treated at 1121Â°C (2050Â°F), water quenched plate)
	@Temperature 204 Â°C	@Temperature 399 Â°F	
	176 J		

Mechanical Properties	Metric	English	Comments
	@Temperature 23.0 Å°C	130 ft-lb @Temperature 73.4 Å°F	

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 Åµm/m-Å°C	7.78 Åµin/in-Å°F	
	@Temperature 26.0 - 316 Å°C	@Temperature 78.8 - 601 Å°F	
	14.5 Åµm/m-Å°C	8.06 Åµin/in-Å°F	
	@Temperature 26.0 - 427 Å°C	@Temperature 78.8 - 801 Å°F	
	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	
Specific Heat Capacity	16.9 Åµm/m-Å°C	9.39 Åµin/in-Å°F	
	@Temperature 26.0 - 982 Å°C	@Temperature 78.8 - 1800 Å°F	
	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	
	0.525 J/g-Å°C	0.125 BTU/lb-Å°F	
	@Temperature 400 Å°C	@Temperature 752 Å°F	

Thermal Properties	Metric	English	Comments
	@Temperature 500 Â°C	@Temperature 932 Â°F	
	0.573 J/g-Â°C	0.137 BTU/lb-Â°F	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
Thermal Conductivity	12.3 W/m-K	85.4 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
	13.8 W/m-K	95.8 BTU-in/hr-ftÂ²-Â°F	
	@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 %	

Component Elements Properties	Metric	English	Comments
Nitrogen, N	0.080 %	0.080 %	
Silicon, Si	0.30 %	0.30 %	
Tungsten, W	2.0 %	2.0 %	

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