Haynes 242® alloy, hot rolled plate, annealed and aged

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Age-hardenable, high ductility in the aged condition, lower thermal expansion than most alloys, very good oxidation resistance up to 815°C, excellent low cycle fatigue properties, very good thermal stability, and resistance to high-temperature fluorine and fluoride environments. Applications include seal rings, containment rings, duct segments, casings, fasteners, rocket nozzles, pumps, hydrofluoric acid vapor containing processes, fluoroelastomer process equipment such as extrusion screws.Data provided by the manufacturer, Haynes International, Inc.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Haynes-242-alloy-hot-rolled-plate-annealed-and-aged.php

Physical Properties	Metric	English	Comments
Density	9.05 g/cc	0.327 lb/in³	at RT

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	257	257	Converted from Vickers hardness
Hardness, Knoop	286	286	Converted from Vickers hardness
Hardness, Rockwell C	19	19	Converted from Vickers hardness
Hardness, Vickers	78.0 @Temperature 870 °C	78.0 @Temperature 1600 °F	
	140 @Temperature 760 °C	140 @Temperature 1400 °F	
	218 @Temperature 650 °C	218 @Temperature 1200 °F	
	263 @Temperature 540 °C	263 @Temperature 1000 °F	
	271 @Temperature 425 °C	271 @Temperature 797 °F	
Tensile Strength, Ultimate	1270 MPa	184000 psi	
	280 MPa @Temperature 980 °C	40600 psi @Temperature 1800 °F	
	480 MPa @Temperature 870 °C	69600 psi @Temperature 1600 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature 760 °C	@Temperature 1400 °F	
	805 MPa @Temperature 705 °C	117000 psi @Temperature 1300 °F	
	945 MPa @Temperature 650 °C	137000 psi @Temperature 1200 °F	
	1000 MPa @Temperature 540 °C	145000 psi @Temperature 1000 °F	
	1060 MPa @Temperature 425 °C	154000 psi @Temperature 797 °F	
	1075 MPa @Temperature 315 °C	155900 psi @Temperature 599 °F	
	1110 MPa @Temperature 205 °C	161000 psi @Temperature 401 °F	
	1195 MPa @Temperature 95.0 °C	173300 psi @Temperature 203 °F	
Tensile Strength, Yield	780 MPa @Strain 0.200 %	113000 psi @Strain 0.200 %	
	190 MPa @Strain 0.200 %, Temperature 980 °C	27600 psi @Strain 0.200 %, Temperature 1800 °F	
	275 MPa @Strain 0.200 %, Temperature 870 °C	39900 psi @Strain 0.200 %, Temperature 1600 °F	
	290 MPa @Strain 0.200 %, Temperature 760 °C	42100 psi @Strain 0.200 %, Temperature 1400 °F	
	450 MPa @Strain 0.200 %, Temperature 705 °C	65300 psi @Strain 0.200 %, Temperature 1300 °F	
	480 MPa @Strain 0.200 %, Temperature 540 °C	69600 psi @Strain 0.200 %, Temperature 1000 °F	
	525 MPa	76100 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 0.200 %, Temperature 650 °C	@Strain 0.200 %, Temperature 1200 °F	
	555 MPa @Strain 0.200 %, Temperature 425 °C	80500 psi @Strain 0.200 %, Temperature 797 °F	
	600 MPa @Strain 0.200 %, Temperature 315 °C	87000 psi @Strain 0.200 %, Temperature 599 °F	
	630 MPa @Strain 0.200 %, Temperature 205 °C	91400 psi @Strain 0.200 %, Temperature 401 °F	
	725 MPa @Strain 0.200 %, Temperature 95.0 °C	105000 psi @Strain 0.200 %, Temperature 203 °F	
Elongation at Break	38.1 %	38.1 %	in 4D
	30.9 % @Temperature 705 °C	30.9 % @Temperature 1300 °F	in 4D
	37.7 % @Temperature 650 °C	37.7 % @Temperature 1200 °F	in 4D
	39.8 % @Temperature 95.0 °C	39.8 % @Temperature 203 °F	in 4D
	42.3 % @Temperature 205 °C	42.3 % @Temperature 401 °F	in 4D
	42.7 % @Temperature 315 °C	42.7 % @Temperature 599 °F	in 4D
	44 % @Temperature 425 °C	44 % @Temperature 797 °F	in 4D
	46.6 % @Temperature 540 °C	46.6 % @Temperature 1000 °F	in 4D
	56.1 % @Temperature 870 °C	56.1 % @Temperature 1600 °F	in 4D
	65.1 % @Temperature 980 °C	65.1 % @Temperature 1800 °F	in 4D

Mechanical Properties	Metric	English	Comments
	@Temperature 760 °C	@Temperature 1400 °F	
Reduction of Area	46.6 %	46.6 %	
	30.4 %	30.4 %	
	@Temperature 705 °C	@Temperature 1300 °F	
	39.7 %	39.7 %	
	@Temperature 425 °C	@Temperature 797 °F	
	41.4 %	41.4 %	
	@Temperature 540 °C	@Temperature 1000 °F	
	41.5 %	41.5 %	
	@Temperature 315 °C	@Temperature 599 °F	
	41.8 %	41.8 %	
	@Temperature 650 °C	@Temperature 1200 °F	
	43.1 %	43.1 %	
	@Temperature 205 °C	@Temperature 401 °F	
	45 %	45 %	
	@Temperature 760 °C	@Temperature 1400 °F	
	46.9 %	46.9 %	
	@Temperature 870 °C	@Temperature 1600 °F	
	48.1 %	48.1 %	
	@Temperature 95.0 °C	@Temperature 203 °F	
	86 %	86 %	
	@Temperature 980 °C	@Temperature 1800 °F	
Modulus of Elasticity	229 GPa	33200 ksi	RT
	152 GPa	22000 ksi	
	@Temperature 1000 °C	@Temperature 1830 °F	
	163 GPa	23600 ksi	
	@Temperature 900 °C	@Temperature 1650 °F	
	172 GPa	24900 ksi	
	@Temperature 800 °C	@Temperature 1470 °F	
	185 GPa	26800 ksi	

Mechanical Properties	Metric	English	Comments
	@Temperature 700 °C	@Temperature 1290 °F	
	193 GPa	28000 ksi	
	@Temperature 600 °C	@Temperature 1110 °F	
	199 GPa	28900 ksi	
	@Temperature 500 °C	@Temperature 932 °F	
	206 GPa	29900 ksi	
	@Temperature 400 °C	@Temperature 752 °F	
	213 GPa	30900 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	219 GPa	31800 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	225 GPa	32600 ksi	
	@Temperature 100 °C	@Temperature 212 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	10.8 µm/m-°C	6.00 µin/in-°F	
	@Temperature 25.0 - 100 °C	@Temperature 77.0 - 212 °F	
	11.3 µm/m-°C	6.28 µin/in-°F	
	@Temperature 25.0 - 200 °C	@Temperature 77.0 - 392 °F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000122 ohm-cm	0.000122 ohm-cm	RT
	0.0001234 ohm-cm	0.0001234 ohm-cm	
	@Temperature 100 °C	@Temperature 212 °F	
	0.0001251 ohm-cm	0.0001251 ohm-cm	
	@Temperature 200 °C	@Temperature 392 °F	
	0.0001267 ohm-cm	0.0001267 ohm-cm	
	@Temperature 300 °C	@Temperature 572 °F	
	0.0001276 ohm-cm	0.0001276 ohm-cm	
	@Temperature 1000 °C	@Temperature 1830 °F	
	0.000128 ohm-cm	0.000128 ohm-cm	

Electrical Properties	Metric	English	Comments
	@Temperature 400 °C	@Temperature 752 °F	
	0.0001295 ohm-cm	0.0001295 ohm-cm	
	@Temperature 500 °C	@Temperature 932 °F	
	0.0001298 ohm-cm	0.0001298 ohm-cm	
	@Temperature 900 °C	@Temperature 1650 °F	
	0.0001306 ohm-cm	0.0001306 ohm-cm	
	@Temperature 600 °C	@Temperature 1110 °F	
	0.000132 ohm-cm	0.000132 ohm-cm	
	@Temperature 700 °C	@Temperature 1290 °F	
	0.0001324 ohm-cm	0.0001324 ohm-cm	
	@Temperature 800 °C	@Temperature 1470 °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