

Outokumpu 4841 High Temperature Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

Material Notes:

Variant of 1.4845 with an increased silicon content which enhances the steel's resistance to oxidation/corrosion but has also made it more susceptible to embrittlement. Applications: Heat and creep resistance. For use over 550°C for equipment and components within: Iron, steel, and non-ferrous industries Engineering industry Energy conservation plants Cement industry Available in hot rolled plate (Quarto) form.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Outokumpu-4841-High-Temperature-Austenitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.80 g/cc	0.282 lb/in ³	RT

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	595 MPa	86300 psi	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
Tensile Strength, Yield	275 MPa	39900 psi	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	315 MPa	45700 psi	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	@Strain 1.00 %	@Strain 1.00 %	
Elongation at Break	55 %	55 %	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
Rupture Strength	10.0 MPa	1450 psi	@Temperature 900 °C, Time 3.60e+7 sec
	@Temperature 900 °C, Time 3.60e+7 sec	@Temperature 1650 °F, Time 10000 hour	
	14.0 MPa	2030 psi	@Temperature 850 °C, Time 3.60e+7 sec
	@Temperature 850 °C, Time 3.60e+7 sec	@Temperature 1560 °F, Time 10000 hour	
	20.0 MPa	2900 psi	@Temperature 800 °C, Time 3.60e+7 sec
	@Temperature 800 °C, Time 3.60e+7 sec	@Temperature 1470 °F, Time 10000 hour	
	28.0 MPa	4060 psi	@Temperature 750 °C, Time 3.60e+7 sec
	@Temperature 750 °C, Time 3.60e+7 sec	@Temperature 1380 °F, Time 10000 hour	
	40.0 MPa	5800 psi	@Temperature 700 °C, Time 3.60e+7 sec
	@Temperature 700 °C, Time 3.60e+7 sec	@Temperature 1290 °F, Time 10000 hour	
	65.0 MPa	9430 psi	

Mechanical Properties	Metric	English	Comments
	@Temperature 650 °C, Time 3.60e+7 sec	@Temperature 1200 °F, Time 10000 hour	
	130 MPa	18900 psi	
	@Temperature 600 °C, Time 3.60e+7 sec	@Temperature 1110 °F, Time 10000 hour	
Modulus of Elasticity	196 GPa	28400 ksi	RT
	120 GPa	17400 ksi	
	@Temperature 1000 °C	@Temperature 1830 °F	
	158 GPa	22900 ksi	
	@Temperature 500 °C	@Temperature 932 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	18.8 µm/m-°C	10.4 µin/in-°F	
	@Temperature 500 °C	@Temperature 932 °F	
	20.0 µm/m-°C	11.1 µin/in-°F	
	@Temperature 1000 °C	@Temperature 1830 °F	
Specific Heat Capacity	0.470 J/g-°C	0.112 BTU/lb-°F	RT
	0.530 J/g-°C	0.127 BTU/lb-°F	
	@Temperature 500 °C	@Temperature 932 °F	
Thermal Conductivity	11.9 W/m-K	82.6 BTU-in/hr-ft ² -°F	RT
	27.8 W/m-K	193 BTU-in/hr-ft ² -°F	
	@Temperature 1000 °C	@Temperature 1830 °F	
Maximum Service Temperature, Air	1125 °C	2057 °F	Dry Air

Component Elements Properties	Metric	English	Comments
Carbon, C	0.020 %	0.020 %	
Chromium, Cr	25 %	25 %	
Iron, Fe	54.98 %	54.98 %	
Nickel, Ni	20 %	20 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000960 ohm-cm	0.0000960 ohm-cm	RT

Processing Properties	Metric	English	Comments
Annealing Temperature	1040 - 1070 °C	1900 - 1960 °F	Stress Relief Annealing (min. 0.5 h)
	1050 - 1150 °C	1920 - 2100 °F	Solution Annealing

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