

## Outokumpu 4541 Cr-Ni Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

### Material Notes:

Good corrosion resistance and weldable. Resistant to sensitization. Applications: Welded screens Furnace belts Catalytic converter mesh Available in hot rolled plate (Quarto), hot rolled strip/sheet (CPP), cold rolled strip/sheet, cold rolled narrow strip, bar, and rod forms.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Outokumpu-4541-Cr-Ni-Austenitic-Stainless-Steel.php](http://www.lookpolymers.com/polymer_Outokumpu-4541-Cr-Ni-Austenitic-Stainless-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.90 g/cc	0.285 lb/in <sup>3</sup>	RT

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	160	160	Outokumpu Typical, 20°C, Cold rolled strip/sheet; EN 10003-1
	165	165	Outokumpu Typical, 20°C, Hot rolled plate (Quarto); EN 10003-1
Tensile Strength, Ultimate	>= 500 MPa	>= 72500 psi	EN 10002-1
	570 MPa	82700 psi	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	360 MPa	52200 psi	EN min.; EN 10002-5
	@Temperature 500 °C	@Temperature 932 °F	
	375 MPa	54400 psi	EN min.; EN 10002-5
	@Temperature 300 °C	@Temperature 572 °F	
	375 MPa	54400 psi	EN min.; EN 10002-5
	@Temperature 400 °C	@Temperature 752 °F	
	390 MPa	56600 psi	EN min.; EN 10002-5
	@Temperature 200 °C	@Temperature 392 °F	
Tensile Strength, Yield	440 MPa	63800 psi	EN min.; EN 10002-5
	@Temperature 100 °C	@Temperature 212 °F	
	855 MPa	124000 psi	EN min; EN 10002-5
	@Temperature -80.0 °C	@Temperature -112 °F	
	1200 MPa	174000 psi	EN min; EN 10002-5
	@Temperature -196 °C	@Temperature -321 °F	
	200 MPa	29000 psi	EN min.,RT; EN 10002-1

Mechanical Properties	@Strain 0.200 % Metric	@Strain 0.200 % English	Comments
	240 MPa	34800 psi	EN min.,RT; EN 10002-1
	@Strain 1.00 %	@Strain 1.00 %	
	250 MPa	36300 psi	Outokumpu Typical,Hot Rolled Plate (Quarto); EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	290 MPa	42100 psi	Outokumpu Typical,Hot Rolled Plate (Quarto); EN 10002-1
	@Strain 1.00 %	@Strain 1.00 %	
	119 MPa	17300 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 500 °C	@Strain 0.200 %, Temperature 932 °F	
	125 MPa	18100 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 400 °C	@Strain 0.200 %, Temperature 752 °F	
	136 MPa	19700 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 300 °C	@Strain 0.200 %, Temperature 572 °F	
	149 MPa	21600 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 500 °C	@Strain 1.00 %, Temperature 932 °F	
	156 MPa	22600 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 400 °C	@Strain 1.00 %, Temperature 752 °F	
	157 MPa	22800 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 200 °C	@Strain 0.200 %, Temperature 392 °F	
	167 MPa	24200 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 300 °C	@Strain 1.00 %, Temperature 572 °F	
	176 MPa	25500 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 100 °C	@Strain 0.200 %, Temperature 212 °F	
	186 MPa	27000 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 200 °C	@Strain 1.00 %, Temperature 392 °F	
	200 MPa	29000 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature -196 °C	@Strain 0.200 %, Temperature -321 °F	

Mechanical Properties	Metric	English	Comments
	@Strain 0.200 %, Temperature -80.0 °C	@Strain 0.200 %, Temperature -112 °F	EN min.; EN 10002-5
	208 MPa	30200 psi	
	@Strain 1.00 %, Temperature 100 °C	@Strain 1.00 %, Temperature 212 °F	EN min.; EN 10002-5
	240 MPa	34800 psi	
	@Strain 1.00 %, Temperature -196 °C	@Strain 1.00 %, Temperature -321 °F	EN min.; EN 10002-5
	240 MPa	34800 psi	
	@Strain 1.00 %, Temperature -80.0 °C	@Strain 1.00 %, Temperature -112 °F	EN min.; EN 10002-5
Elongation at Break	>= 40.0 %	>= 40.0 %	EN 10002-1
	55 %	55 %	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	30 %	30 %	
	@Temperature -196 °C	@Temperature -321 °F	EN min
	35 %	35 %	
	@Temperature -80.0 °C	@Temperature -112 °F	EN min
Modulus of Elasticity	200 GPa	29000 ksi	RT
	165 GPa	23900 ksi	
	@Temperature 500 °C	@Temperature 932 °F	
	172 GPa	24900 ksi	
	@Temperature 400 °C	@Temperature 752 °F	
	179 GPa	26000 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	186 GPa	27000 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	194 GPa	28100 ksi	
	@Temperature 100 °C	@Temperature 212 °F	
Poissons Ratio	0.30	0.30	RT
Shear Modulus	77.0 GPa	11200 ksi	calculated
			Hot rolled plate/Cold rolled

Impact Test Mechanical Properties	$\geq 60.0$ J Metric	$\geq 44.3$ ft-lb English	strip/sheet, 10x10mm test pieces; EN Comments
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Thermal Properties	Metric	English	Comments
CTE, linear	16.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	8.89 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 100 °C	@Temperature 212 °F	
	16.5 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	9.17 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 200 °C	@Temperature 392 °F	
	17.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	9.44 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 300 °C	@Temperature 572 °F	
	17.5 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	9.72 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 400 °C	@Temperature 752 °F	
	18.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	10.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 500 °C	@Temperature 932 °F	
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	RT
Thermal Conductivity	15.0 W/m-K	104 BTU-in/hr-ft <sup>2</sup> -°F	RT
	20.0 W/m-K	139 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 400 °C	@Temperature 752 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.040 %	0.040 %	
Chromium, Cr	17.3 %	17.3 %	
Iron, Fe	73.56 %	73.56 %	
Nickel, Ni	9.1 %	9.1 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000730 ohm-cm	0.0000730 ohm-cm	RT

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