

## Outokumpu 4301 Cr-Ni Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

### Material Notes:

General purpose steel with good corrosion resistance. Applications: Wide variety of applications in construction, chemical, petroleum, automobile, and domestic appliance markets. 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-4301-Cr-Ni-Austenitic-Stainless-Steel.php](http://www.lookpolymers.com/polymer_Outokumpu-4301-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	165	165	Outokumpu Typical, 20°C, Hot rolled plate (Quarto); EN 10003-1
	175	175	Outokumpu Typical, 20°C, Cold rolled strip/sheet; EN 10003-1
Tensile Strength, Ultimate	>= 520 MPa	>= 75400 psi	EN 10002-1
	600 MPa	87000 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	
	380 MPa	55100 psi	EN min.; EN 10002-5
	@Temperature 300 °C	@Temperature 572 °F	
	380 MPa	55100 psi	EN min.; EN 10002-5
	@Temperature 400 °C	@Temperature 752 °F	
	400 MPa	58000 psi	EN min.; EN 10002-5
	@Temperature 200 °C	@Temperature 392 °F	
450 MPa	65300 psi	EN min.; EN 10002-5	
@Temperature 100 °C	@Temperature 212 °F		
860 MPa	125000 psi	EN min; EN 10002-5	
@Temperature -80.0 °C	@Temperature -112 °F		
1250 MPa	181000 psi	EN min; EN 10002-5	
@Temperature -196 °C	@Temperature -321 °F		

Mechanical Properties	210 MPa Metric	30500 psi English	Comments, EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	250 MPa	36300 psi	EN min.,RT; EN 10002-1
	@Strain 1.00 %	@Strain 1.00 %	
	290 MPa	42100 psi	Outokumpu Typical,Cold Rolled Strip/Sheet; EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	330 MPa	47900 psi	Outokumpu Typical,Cold Rolled Strip/Sheet; EN 10002-1
	@Strain 1.00 %	@Strain 1.00 %	
	92.0 MPa	13300 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 500 °C	@Strain 0.200 %, Temperature 932 °F	
	98.0 MPa	14200 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 400 °C	@Strain 0.200 %, Temperature 752 °F	
	110 MPa	16000 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 300 °C	@Strain 0.200 %, Temperature 572 °F	
	120 MPa	17400 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 500 °C	@Strain 1.00 %, Temperature 932 °F	
	125 MPa	18100 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 400 °C	@Strain 1.00 %, Temperature 752 °F	
	127 MPa	18400 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 200 °C	@Strain 0.200 %, Temperature 392 °F	
	135 MPa	19600 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 300 °C	@Strain 1.00 %, Temperature 572 °F	
	157 MPa	22800 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 200 °C	@Strain 1.00 %, Temperature 392 °F	
	157 MPa	22800 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 100 °C	@Strain 0.200 %, Temperature 212 °F	
	191 MPa	27700 psi	

Mechanical Properties	Metric	English	EN min.; EN 10002-5 Comments
	@Strain 1.00 %, Temperature 100 °C	@Strain 1.00 %, Temperature 212 °F	
	270 MPa	39200 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature -80.0 °C	@Strain 0.200 %, Temperature -112 °F	
	300 MPa	43500 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature -196 °C	@Strain 0.200 %, Temperature -321 °F	
	350 MPa	50800 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature -80.0 °C	@Strain 1.00 %, Temperature -112 °F	
	400 MPa	58000 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature -196 °C	@Strain 1.00 %, Temperature -321 °F	
Elongation at Break	>= 45.0 %	>= 45.0 %	EN 10002-1
	55 %	55 %	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	30 %	30 %	EN min
	@Temperature -196 °C	@Temperature -321 °F	
	35 %	35 %	EN min
	@Temperature -80.0 °C	@Temperature -112 °F	
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

Mechanical Properties	Metric	English	Comments
Impact Test	$\geq 60.0 \text{ J}$	$\geq 44.3 \text{ ft-lb}$	Hot rolled plate/Cold rolled strip/sheet, 10x10mm test pieces; EN 10045-1

Thermal Properties	Metric	English	Comments
CTE, linear	$16.0 \mu\text{m/m-}^\circ\text{C}$	$8.89 \mu\text{in/in-}^\circ\text{F}$	
	@Temperature 100 °C	@Temperature 212 °F	
	$16.5 \mu\text{m/m-}^\circ\text{C}$	$9.17 \mu\text{in/in-}^\circ\text{F}$	
	@Temperature 200 °C	@Temperature 392 °F	
	$17.0 \mu\text{m/m-}^\circ\text{C}$	$9.44 \mu\text{in/in-}^\circ\text{F}$	
	@Temperature 300 °C	@Temperature 572 °F	
	$17.5 \mu\text{m/m-}^\circ\text{C}$	$9.72 \mu\text{in/in-}^\circ\text{F}$	
	@Temperature 400 °C	@Temperature 752 °F	
	$18.0 \mu\text{m/m-}^\circ\text{C}$	$10.0 \mu\text{in/in-}^\circ\text{F}$	
	@Temperature 500 °C	@Temperature 932 °F	
Specific Heat Capacity	$0.500 \text{ J/g-}^\circ\text{C}$	$0.120 \text{ BTU/lb-}^\circ\text{F}$	RT
Thermal Conductivity	$15.0 \text{ W/m-K}$	$104 \text{ BTU-in/hr-ft}^2\text{-}^\circ\text{F}$	RT
	$20.0 \text{ W/m-K}$	$139 \text{ BTU-in/hr-ft}^2\text{-}^\circ\text{F}$	
	@Temperature 400 °C	@Temperature 752 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.040 %	0.040 %	
Chromium, Cr	18.1 %	18.1 %	
Iron, Fe	73.56 %	73.56 %	
Nickel, Ni	8.3 %	8.3 %	

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

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