

## Outokumpu 4318 Cr-Ni Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

### Material Notes:

Applications: Wet corrosion resistance and general service. Available in hot rolled strip/sheet (CPP) and cold rolled strip sheet forms.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Outokumpu-4318-Cr-Ni-Austenitic-Stainless-Steel.php](http://www.lookpolymers.com/polymer_Outokumpu-4318-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
Tensile Strength, Ultimate	765 MPa	111000 psi	Outokumpu Typical, Cold Rolled Strip/Sheet; EN 10002-1
	440 MPa	63800 psi	EN min.; EN 10002-5
	@Temperature 300 °C	@Temperature 572 °F	
Tensile Strength, Yield	460 MPa	66700 psi	EN min.; EN 10002-5
	@Temperature 200 °C	@Temperature 392 °F	
	530 MPa	76900 psi	EN min.; EN 10002-5
Tensile Strength, Yield	@Temperature 100 °C	@Temperature 212 °F	
	350 MPa	50800 psi	EN min.,RT; EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
Tensile Strength, Yield	360 MPa	52200 psi	Outokumpu Typical,Cold Rolled Strip/Sheet; EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	395 MPa	57300 psi	Outokumpu Typical,Cold Rolled Strip/Sheet; EN 10002-1
Tensile Strength, Yield	@Strain 1.00 %	@Strain 1.00 %	
	170 MPa	24700 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 300 °C	@Strain 0.200 %, Temperature 572 °F	
Tensile Strength, Yield	185 MPa	26800 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 200 °C	@Strain 0.200 %, Temperature 392 °F	
	200 MPa	29000 psi	EN min.; EN 10002-5
Tensile Strength, Yield	@Strain 1.00 %, Temperature 300 °C	@Strain 1.00 %, Temperature 572 °F	
	215 MPa	31200 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 1.00 %, Temperature 200 °C	@Strain 1.00 %, Temperature 392 °F	EN min.; EN 10002-5
	265 MPa	38400 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 100 °C	@Strain 0.200 %, Temperature 212 °F	
	300 MPa	43500 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature 100 °C	@Strain 1.00 %, Temperature 212 °F	
Elongation at Break	47 %	47 %	Outokumpu Typical, Cold Rolled Strip/Sheet; EN 10002-1
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
Impact Test	>= 60.0 J	>= 44.3 ft-lb	Hot rolled plate/Cold rolled strip/sheet, 10x10mm test pieces; EN 10045-1

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 µm/m-°C	8.89 µin/in-°F	
	@Temperature 100 °C	@Temperature 212 °F	
	16.5 µm/m-°C	9.17 µin/in-°F	
	@Temperature 200 °C	@Temperature 392 °F	
	17.0 µm/m-°C	9.44 µin/in-°F	
	@Temperature 300 °C	@Temperature 572 °F	

Thermal Properties	Metric	English	Comments
	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	0.020 %	0.020 %	
Chromium, Cr	17.7 %	17.7 %	
Iron, Fe	75.64 %	75.64 %	
Nickel, Ni	6.5 %	6.5 %	
Nitrogen, N	0.14 %	0.14 %	

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

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