AK Steel 201LN Austenitic Stainless steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

Material Notes:

AK Steel 210 was developed originally to conserve nickel. It provides properties similar to Type 301 and can be used in most applications for Type 301. This alloy is non-magnetic in the annealed condition but slightly magnetic when cold worked. Excellent toughness at low temperatures. Typical uses include appliances, restaurant equipment, cooking utensils, sinks, automotive trim, architectural applications such as windows and doors, railway cars, trailers and hose clamps.Information provided by AK Steel

Order this product through the following link:
http://www.lookpolymers.com/polymer_AK-Steel-201LN-Austenitic-Stainless-steel.php

Physical Properties	Metric	English	Comments
Density	7.81 g/cc	0.282 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	87	87	Annealed
Hardness, Rockwell C	25	25	Cold Worked 1/4 hard
	32	32	Cold Worked 1/2 hard
	41	41	Cold-Worked Full hard
Tensile Strength, Ultimate	758 MPa	110000 psi	Annealed
	862 MPa	125000 psi	Cold-Worked 1/4 hard
	1034 MPa	150000 psi	Cold-Worked 1/2 hard
	1276 MPa	185100 psi	Cold-Worked Full hard
Tensile Strength, Yield	379 MPa @Strain 0.200 %	55000 psi @Strain 0.200 %	Annealed
	517 MPa @Strain 0.200 %	75000 psi @Strain 0.200 %	Cold-Worked 1/4 hard
	758 MPa @Strain 0.200 %	110000 psi @Strain 0.200 %	Cold-Worked 1/2 hard
	965 MPa @Strain 0.200 %	140000 psi @Strain 0.200 %	Cold-Worked Full hard
Elongation at Break	8.0 %	8.0 %	in 2 inches, Cold-Worked Full hard
	15 %	15 %	in 2 inches, Cold-Worked 1/2 hard

Mechanical Properties	Metric	English	Comments
	52 %	52 %	in 2 inches, Annealed
Modulus of Elasticity	197 GPa	28600 ksi	
Izod Impact	163 J	120 ft-lb	V-Notch (Annealed)

Thermal Properties	Metric	English	Comments
CTE, linear	15.7 µm/m-°C @Temperature 0.000 - 100 °C	8.72 µin/in-°F @Temperature 32.0 - 212 °F	
	20.3 µm/m-°C @Temperature <=871 °C	11.3 µin/in-°F @Temperature <=1600 °F	
Specific Heat Capacity	0.500 J/g-°C @Temperature 0.000 - 100 °C	0.120 BTU/lb-°F @Temperature 32.0 - 212 °F	
Thermal Conductivity	16.2 W/m-K @Temperature 100 °C	112 BTU-in/hr-ft²-°F @Temperature 212 °F	
	21.4 W/m-K @Temperature 500 °C	149 BTU-in/hr-ft²-°F @Temperature 932 °F	
Melting Point	1399 - 1454 °C	2550 - 2649 °F	
Solidus	1399 °C	2550 °F	
Liquidus	1454 °C	2649 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.15 %	<= 0.15 %	
Chromium, Cr	16 - 18 %	16 - 18 %	
Iron, Fe	67.51 - 75 %	67.51 - 75 %	As Remainder
Manganese, Mn	5.5 - 7.5 %	5.5 - 7.5 %	
Nickel, Ni	3.5 - 5.5 %	3.5 - 5.5 %	
Nitrogen, N	<= 0.25 %	<= 0.25 %	
Phosphorous, P	<= 0.060 %	<= 0.060 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	

Component Elements Properties	Metric	English	Comments
Sulfur, S	0.0150 %	0.0150 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000685 ohm-cm	0.0000685 ohm-cm	
Magnetic Permeability	1.02	1.02	H = 200 Oersteds, Annealed

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