



Richco
 MATERIAL SPECIFICATION (MS)
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RMS 283 -

Richco, Inc.
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AISI Type 304 Stainless Steel

Component	Wt. %
C	Max 0.08
Cr	18 - 20
Fe	66.345 - 74
Mn	Max 2
Ni	8 - 10.5
P	Max 0.045
S	Max 0.03
Si	Max 1

Physical Properties	Metric	English	Comments
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Density	<u>8 g/cc</u>	0.289 lb/in ³	
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Mechanical Properties

Hardness, Brinell	123	123	Converted from Rockwell B hardness.
Hardness, Knoop	138	138	Converted from Rockwell B hardness.
Hardness, Rockwell B	70	70	
Hardness, Vickers	129	129	Converted from Rockwell B hardness.
Tensile Strength, Ultimate	<u>505 MPa</u>	73200 psi	
Tensile Strength, Yield	<u>215 MPa</u>	31200 psi	at 0.2%

P. Kucharski
 3/13/06



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			offset
Elongation at Break	<u>70 %</u>	70 %	in 50 mm
Modulus of Elasticity	193 - 200 GPa	28000 - 29000 ksi	
Poisson's Ratio	0.29	0.29	
Charpy Impact	<u>325 J</u>	240 ft-lb	
Shear Modulus	<u>86 GPa</u>	12500 ksi	

Electrical Properties

Electrical Resistivity	<u>7.2e-005 ohm-cm</u>	7.2e-005 ohm-cm	at 20°C (68°F); 1.16E-04 at 650°C (1200°F)
Magnetic Permeability	1.008	1.008	at RT

Thermal Properties

CTE, linear 20°C	<u>17.3 μm/m-°C</u>	9.61 μin/in-°F	from from 0-100°C
CTE, linear 250°C	<u>17.8 μm/m-°C</u>	9.89 μin/in-°F	at 0-315°C (32-600°F)
CTE, linear 500°C	<u>18.7 μm/m-°C</u>	10.4 μin/in-°F	at 0-650°C
Specific Heat Capacity	<u>0.5 J/g-°C</u>	0.12 BTU/lb-°F	from 0- 100°C (32- 212°F)
Thermal Conductivity	<u>16.2 W/m-K</u>	112 BTU-in/hr-ft ² -°F	at 0- 100°C, 21.5 W/m°C at 500°C
Melting Point	1400 - 1455 °C	2550 - 2650 °F	
Solidus	<u>1400 °C</u>	2550 °F	
Liquidus	<u>1455 °C</u>	2650 °F	

D. Kielbaso
 3/13/06