

ATI Allegheny Ludlum Stainless Steel Ohmaloy® 40 Resistance Alloy

Category : Metal , Electronic/Magnetic Alloy , Ferrous Metal

Material Notes:

Ohmaloy 40 alloy is a moderately magnetic, ductile stainless steel having extremely high electrical resistivity. In addition to imparting high electrical resistivity, the aluminum content in these iron-13% chromium-aluminum resistance alloys also provides oxidation resistance. This alloy are capable of resisting oxidation for continuous duty at temperature up to 982 degrees Celsius, and is satisfactory for intermittent heating in temperatures form 982 to 1038 degrees Celsius. This alloy is used in many applications requiring dissipation of electrical energy. Some examples are grid resistors for mine locomotives, crane starters and, the largest application, braking resistors for railroad diesel locomotives. This alloy is used where the application demands heavy-duty resistors with a small volume-to-volume ratio. They can also be used in applications where resistance heating is required. Information provided by Allegheny Ludlum

Order this product through the following link:

http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-Stainless-Steel-Ohmaloy-40-Resistance-Alloy.php

Physical Properties	Metric	English	Comments
Density	7.41 g/cc	0.268 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	88	88	Typical
Tensile Strength, Ultimate	600 MPa	87000 psi	Typical
Tensile Strength, Yield	448 MPa	65000 psi	Typical
Elongation at Break	23 %	23 %	typical in 2"

Thermal Properties	Metric	English	Comments
CTE, linear	11.3 µm/m-°C	6.28 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	12.2 µm/m-°C	6.78 µin/in-°F	
	@Temperature 20.0 - 500 °C	@Temperature 68.0 - 932 °F	
	14.2 µm/m-°C	7.89 µin/in-°F	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Thermal Conductivity	14.5 W/m-K	101 BTU-in/hr-ft ² -°F	
	@Temperature 50.0 °C	@Temperature 122 °F	

Component Elements Properties	Metric	English	Comments
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Component Elements Properties	Metric	English	Comments
Carbon, C	0.025 %	0.025 %	
Chromium, Cr	13 %	13 %	
Iron, Fe	82 %	82 %	as balance
Manganese, Mn	0.35 %	0.35 %	
Silicon, Si	0.30 %	0.30 %	
Titanium, Ti	0.30 %	0.30 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000116 ohm-cm	0.000116 ohm-cm	

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