

## Resistalloy International Fecralloy™ 145 Electrical Resistance Steel

Category : Metal , Electronic/Magnetic Alloy , Ferrous Metal , Stainless Steel , Superalloy

### Material Notes:

Ferritic stainless steel with aluminum. Available as wire. Used mainly for electrical elements in both industrial and domestic applications.

Industrial applications vary from small laboratory kilns to heavy-duty heat-treatment furnaces under all types of atmospheres.

"Fecralloy"™ an Fe-Cr-Al steel containing "yttrium" is a versatile alloy and is suitable for use over a wide range up to 1300°C. The "yttrium" is the key to its longer high temperature life, having greater oxidation resistance and form stability over other resistance alloys.™ "Fecralloy" is the registered trademark of the UK Atomic Energy Authority (Now AEA Technology, Harwell). Information provided by Resistalloy International Limited.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Resistalloy-International-Fecralloy-145-Electrical-Resistance-Steel.php](http://www.lookpolymers.com/polymer_Resistalloy-International-Fecralloy-145-Electrical-Resistance-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.10 g/cc	0.257 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	230	230	
Tensile Strength, Ultimate	750 MPa	109000 psi	
	34.0 MPa	4930 psi	
	@Temperature 900 °C	@Temperature 1650 °F	
Tensile Strength, Yield	550 MPa	79800 psi	
Elongation at Break	16 - 20 %	16 - 20 %	
	@Thickness 50.0 mm	@Thickness 1.97 in	

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 µm/m-°C	6.11 µin/in-°F	
	@Temperature 20.0 - 250 °C	@Temperature 68.0 - 482 °F	
	12.0 µm/m-°C	6.67 µin/in-°F	
	@Temperature 20.0 - 500 °C	@Temperature 68.0 - 932 °F	
	15.0 µm/m-°C	8.33 µin/in-°F	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	

Thermal Properties	Metric	English	Comments
Melting Point	1500 °C	2730 °F	
Maximum Service Temperature, Air	1400 °C	2550 °F	

Optical Properties	Metric	English	Comments
Emissivity (0-1)	0.70	0.70	Fully Oxidized

Component Elements Properties	Metric	English	Comments
Aluminum, Al	5.8 %	5.8 %	
Chromium, Cr	22 %	22 %	
Iron, Fe	72 %	72 %	As remainder

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000145 ohm-cm	0.000145 ohm-cm	Temperature Factor is 1.03 at 800°C (1470°F). Temperature Factor is 1.04 at 1000°C (1830°F). Temperature Factor is 1.04 at 1200°C (2190°F).
Curie Temperature	600 °C	1110 °F	

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