

## Cromaloy A

Ferritic Cromaloy A with Aluminium has a number of advantageous characteristics which benefit its use in high temperature heating applications:

- The Aluminium oxide protective layer adheres tightly and provides protection against carburizing atmospheres.
- A low density reduces weight requirements.
- A high Specific Resistance allows for larger cross sectional areas which improves longevity.
- Cromaloy A has good resistance to Sulphur corrosion at high temperatures when compared with NiCr alloys.

### Physical and Mechanical Properties

	Units	
Maximum continuous operating temperature in air	°C	1280
Nominal composition	%	Cr 22 Al 5 Fe Bal.
Density at 20°C	g/cm <sup>3</sup>	7.25
Resistivity at 20°C	μΩcm	135
Thermal conductivity at 20°C	W/mK	13.5
Specific heat capacity at 20°C	kJ/kgK	0.460
Melting point (approx.)	°C	1500
Tensile strength R <sub>m</sub> , 0.5 mm wire – annealed	N/mm <sup>2</sup>	600
Elongation at break, 0.5 mm wire - annealed	%	> 20

### Temperature dependant Factors for Cromaloy A

*Reference temperature 20°C*

Temp °C	200	400	500	600	800	1000	1200
Temp °F	392	752	932	1112	1472	1832	2192
Resistivity Factor	1.009	1.018	1.030	1.039	1.056	1.068	1.073
Coefficient of thermal expansion (10 <sup>-6</sup> /K)	11	12	12	13	14	15	

The figures given in these tables represent nominal or typical values.

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