

Resistant Alloys

Iron-Chromium-Aluminium Alloys



1. Chemical composition

	Ni	Cr	Fe	Cu	Others
%	-	22	Bal.	-	Al: 5, Y+++,++

2. Physical properties

- Resistivity (Ω mm ² /m)	: 1.39
- Temperature coefficient (K x 10 ⁻⁶ /°C) from 20 to 1000 °C	: 100
- Thermal conductivity at 120 °C (Wm ⁻¹ C ⁻¹)	: 16
- Coefficient of linear expansion (coeff. 10 ⁻⁶ /°C) from 20 to 1000 °C	: 15
- Density (g/cm ³)	: 7.10
- Creeping point in	
- at 800 °C	: 8
- at 1 000°C	: 1.5
- Melting point (°C)	: 1 490
- Maximal operating temperature (°C)	: 1 300

Standard mechanical properties

- Tensile Strength (daN/mm ²)	: 75
- Yield Strength (daN/mm ²)	: 50
- Elongation (A% on 100 mm)	: ≥ 18
- Hardness (HV)	: 210

3. Typical Applications

It deals with Iron-Chromium-Aluminium alloy with an high content of Yttrium (> 0.05 %) and addition of rare earths, which have been developed and produced for working temperatures up to 1300 °C specially for application of ceramic electric plates.

By its special composition, it presents exceptional oxidation stability and this is why heating elements have very good form stability.

April 2012 - The data enclosed in this document are only given as indicative values and correspond to our standard products. Different specific requirements are subject to discussion and formal approval by Aperam Alloys Rescal. For further information or special request, please contact us.