Controlled Expansion Alloys
Iron-Nickel Alloys

1. Chemical composition

	Ni	Cr	Fe	Cu	Others
%	72	-	Bal.	-	Mn: 2

2. Physical properties

- Resistivity (Ω mm²/m) : **0.20**
- Temperature coefficient (K x 10- 6/°C) : **4 500**
  from 20 to 100 °C
- Thermal conductivity at 120 °C (Wm- 1° C-1) : **28.9**
- Coefficient of linear expansion (coeff. 10-6/°C) : **13**
  from 20 to 500 °C
- Density (g/cm^3) : **8.46**

- Melting point (°C) : **1 425**

Standard mechanical properties

- Tensile Strength (daN/mm²) : **60**
- Yield Strength (daN/mm²) : **30**
- Elongation (A% on 100 mm) : **≥ 25**
- Hardness (HV) : **90**

3. Typical Applications

This alloy (also called Hytemco) presents the particularity to have a very high temperature coefficient. At 300°C for example, its resistivity has already increased of 2.65 times its value when cold.

This particularity makes it very interesting for the use of emergent heaters because its power will fall when hot. It is in this respect autoregulating.

Typical application is electric blanket.

Aperam Alloys Rescal
200 Rue de la Couronne des Près
F-78680 Epône
France

Tel + 33 1 30 90 04 00
Fax + 33 1 30 90 02 11
rescal@aperam.com
www.aperam.com/alloys-rescal