

Resistant Alloys

Nickel Chromium Alloys



1. Chemical composition

	Ni	Cr	Si	Mn	C	P	S	Fe
Min. %		21	1.00					
Max. %	37	22	3.00	1.00	0.15	0.02	0.01	Bal.

2. Physical properties

- Resistivity (Ω mm²/m) : **1.05** $\pm 5\%$
- Temperature coefficient ($K \times 10^{-6}/^{\circ}C$) from 20 to 1000 $^{\circ}C$: **240**
- Thermal conductivity at 120 $^{\circ}C$ ($Wm^{-1} C^{-1}$) : **13.0**
- Coefficient of linear expansion (coeff. $10^{-6}/^{\circ}C$) from 20 to 1000 $^{\circ}C$: **19.0**
- Density (g/cm^3) : **7.95**
- Creeping point in
 - at 800 $^{\circ}C$: **20**
 - at 1 000 $^{\circ}C$: **4**
- Melting point ($^{\circ}C$) : **1 380**
- Maximal operating temperature ($^{\circ}C$) : **1 050**

Standard mechanical properties

- Tensile Strength (daN/mm²) – dia. > 0.50 mm : **70/85**
- Yield Strength (daN/mm²) – dia. > 0.50 mm : **30/45**
- Elongation (A% on 100 mm) – dia. \geq 0.20 mm : **30**
- Hardness (HV) : **230**

3. Typical Applications

Physical and electrical characteristics of Resistohm® 40CB and Resistohm® 40 are similar, except that Resistohm® 40CB benefits from a specific addition of Columbium (1%).

This element confers to the alloy an improved hot mechanical stability but penalizes its life cycle for purely electrical applications.

The recommended field of application for this alloy is the manufacturing of conveyer belts or other products requiring the same hot mechanical constraints.

4. International standards

Werkstoff Nr 1.4887

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.