Elastic alloy

Alloy 3J40

Description

Alloy 3J40 is a precipitation-hardened Ni-Cr-Al high elastic precision alloy, equivalent to Russian grade 40ХНЮ. It was developed to solve the weaknesses of conventional elastic alloys, which lacked sufficient hardness, wear resistance and non-magnetic property for precision instrument pivot tips working under impact and corrosive environments.

Grade: NiCr40Al4, 40ХНЮ-ВИ (ЭИ793), NiCr38Al4

Chemical Composition (wt%)

Ni	Cr	Al	Ce	Fe	C	Si	Mn	P	S
Balance	39.0 – 41.0	3.3 – 3.5	0.10 – 0.20	⩽ 0.50	⩽ 0.03	⩽ 0.20	⩽ 0.10	⩽ 0.010	⩽ 0.010

Disclaimer: Data is typical for reference only.

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ECA

East China Alloys

DATASHEET

Technical standards

Technical Standards	Product Form
YB/T 5243	Wire as cold worked

Physical Properties

Room-Temperature Constant Parameters

Item	Value
Density	8.20 g/cm³
Poisson's ratio	0.3
Relative magnetic permeability μ_r	< 1.01

Coefficient of thermal expansion

θ/℃	α (×10⁻⁶ /℃)
20–100	12
20–200	12.4
20–300	12.8
20–400	13.2
20–500	13.6
20–600	14

Modulus of Elasticity

θ/℃	GPa
20	210
100	206
200	201
300	195
400	188
500	180
600	171

Shear Modulus

θ/℃	GPa
20	81
100	79
200	77
300	74
400	71
500	68
600	64

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