

GENERAL INFORMATION

Alloy **Nimo®79** – is a magneto-soft iron-nickel alloy with the content of nickel around 80% and 4,2-5,2% of molybdenum, saturation magnetic induction is about 0,8 T. Alloy has the highest technically received magnetic permeability, and very low coercivity.

Typical application of alloy **Nimo®79**:

- toroidal spiral cores for the built-in current transformers
- measuring transformers, inductive components;
- plates, cores of transformers; induction components;
- shielding – for protection against magnetic influence in the form of a magnetic film;
- details of step engines;
- relay details;
- other products with a low coercive force.

Classification

DIN	2.4545
UNS	N14080

Chemical composition, %

Ni	Mo	Fe	C	Mn	Si
80.0	4.9	rest	0.02	0.5	0.3

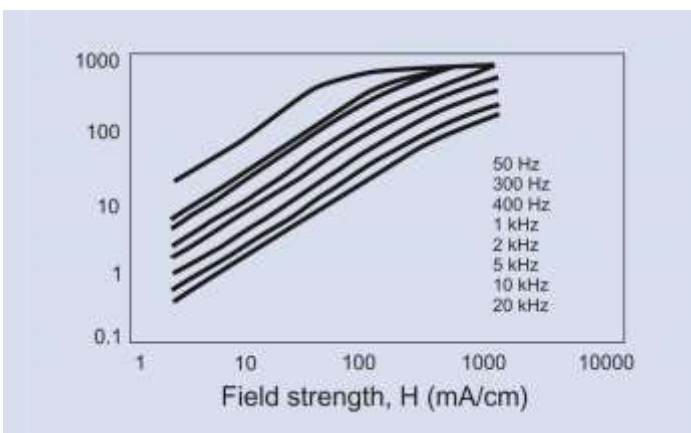
MECHANICAL PROPERTIES AT 20°C

IN ANNEALED CONDITION

Tensile strength, MPa	450
Yield strength (0.2%), MPa	170
Elongation, %	30
Hardness, HRB	90-120

PROCESSING PROPERTIES

Density, g/cm ³	8,7
Heat conductivity, W/(m·°C)	32
TCLE, mm/m·°C (from 20° to 100°C)	12
Elastic modulus, KN/mm ²	210
Saturation magnetostriction	1·10 ⁻⁶
Electric resistance, μΩ·m	0.55
Curie temperature, °C	410
Density, g/cm ³	8,7



Pic. Typical curves of induction magnetic flux for alloy **Nimo®79**, measured for toroidal cores with thickness 0,35 mm.

MAGNETIC PROPERTIES

Magnetical inductive capacity, μ4	≥280000
Coercive field, A/m	≤8.0
Flux density (at Heff= 160mA/cm), mT	≥550
Core losses, W/kg	0.01

At toroidal spiral cores initial magnetical inductive capacity μ4, can reach from 160000 to 380000, and maximal magnetical inductive capacity from 320000 to 480000 at frequency 50Hz and strip thickness 0,065 mm. The static coercivity, as a rule is 1 A/m. The hysteresis loop, can be curved, rectangular or straight. The magnetic properties stated above are reached by means of special annealing. Annealing is made at temperature 1050-1200°C lasting from 2 up to 8 hours. Especially important in case of alloy **Nimo®79** to cool at a temperature 300-600°C, as it considerably influences magnetic properties.

CORROSION RESISTANCE

Resistance to corrosion has an average value in the damp atmosphere.

WELDING

For welding of products from alloy **Nimo®79**, spot welding is suitable. It is possible to use other types of welding. There is an opportunity to provide information in case of Your special questions.

MAIN DELIVERY CONDITIONS

Blanks

Strip, narrow strip, sheet, bar and wire

Ready details

Tape toroidal core with diameter up to 750 mm, wrought plate for the core, relay details and shielding.

Production of products with other sizes under the order is possible.