

## Cold Rolled Strip



### 1. Description, standards & chemical

PERMIMPHY is nickel-iron soft magnetic alloy used for the manufacture of wound cores (e.g. measuring devices, transformers ...)

#### International standards

ASTM A 753, DIN 17405, IEC 404, JIS C 2531

#### Chemical composition (%weight)

	Ni	Mo	Fe
Typical value	80	5	Bal

### 2. Physical properties

Density (g/cm <sup>3</sup> )	Melting T° (°C - °F)	Curie T° (°C - °F)	Thermal expansion (10 <sup>-6</sup> .°K <sup>-1</sup> )	Resistivity (μΩcm)	Thermal conduction (W/°Km)	Specific heat (J.Kg <sup>-1</sup> .°K <sup>-1</sup> )
8.7	1450 - 2642	420 - 788	12	60	19	460

### 3. Magnetic properties \*

Conditions	Thickness (mm - ")	Saturation induction (G - T at 1 Oe ≈ 80 A/m)	Coercive force (Oe - A/m)	Permeability (at 5 mOe ≈ 0.4 A/m)
DC	0.34 - 0.0134	7500 - 0.75	0.005 - 0.4	520000
AC 60Hz	0.34 - 0.0134	-	-	80000

\* Typical values measured on rings sample th. 0.34mm / 0.0134" after heat treatment at 1170°C / 2138°F in pure & dry Hydrogen after proper cooling

### 4. Mechanical properties \*

Temper	Hardness (HV)	Grain size	Tensile strength (MPa - KSI)	Yield strength (MPa - KSI)	Elongation (%)	Young's modulus (MPa - KSI)
Annealed	160	8	650 - 94	280 - 41	35	210000 - 30450
Hard	320	-	1050 - 152	1030 - 149	3	230000 - 33350

\* Typical values for material to be tested in accordance with NF EN 10002, NF EN ISO 6507, NFA 04102

### 5. Standard Delivery & dimensions available

Form	Thickness * (mm / ")	Width (mm / ")	Temper
Coil	0.10 to 0.20 / .004 to .008	10 to 640 / .4 to 25.2	Hard - Soft

\* 0.2mm / 0.0079" thickness is commonly produced

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