

Cold Rolled Strip



Description, standards & chemical

PERMIMPHY is nickel-iron soft magnetic alloy with properties suitable for high quality shieldings, pole pieces, current sensing cores, watch motors components, rotor/stator laminations for synchro resolvers, profiled laminations for transformers, flux concentrators for automotive torque sensors ...

International standards

ASTM A 753, DIN 17445, IEC 404, JIS C 2531

Chemical composition (% weight)

| | Ni | Mo | Fe |
|---------------|----|----|-----|
| Typical value | 80 | 5 | Bal |

Physical properties

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

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 | 1 - 0.04 | 7500 - 0.75 | 0.005 - 0.4 | 470000 |
| DC | 0.34 - 0.0134 | 7500 - 0.75 | 0.005 - 0.4 | 520000 |
| AC 60 Hz | 0.34 - 0.0134 | - | - | 75000 |

* Typical values measured on rings samples after heat treatment at 1170°C / 2138°F in pure & dry Hydrogen after proper cooling

Mechanical properties*

| Temper | Hardness (HV) | Grain size | Tensile strength (MPa - KSI) | Yield strength (MPa - KSI) | Elongation (%) |
|--------|---------------|------------|------------------------------|----------------------------|----------------|
| Soft | 160 | 8 | 650 - 94 | 280 - 41 | 35 |
| Hard | 320 | - | 1050 - 152 | 1030 - 149 | 3 |

* Typical values for material to be tested in accordance with NF EN ISO 6507-1, NF EN ISO 643, NF EN ISO 6892-1 (Méthode B)

Standard Delivery & dimensions available

| Form * | Thickness (mm / ") | Width (mm / ") | Length (mm / ") | Temper |
|--------------|--------------------------|------------------------|-----------------------------|-------------|
| Coil - Sheet | 0.10 to 3 / .004 to .118 | 10 to 640 / .4 to 25.2 | 500 to 3500 / 19.7 to 137.8 | Soft / Hard |

* Depending on thickness, width & temper

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.

Aperam Alloys Imphy

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