

Controlled expansion

IMPHY N48

IMPHY N48 is an iron-nickel controlled expansion alloy suitable to soft glass sealing, with optimal chemical composition to obtain hermetic seals. Typical applications are hermetic feedthroughs and electron gun components.

International standards

ASTM F30 - UNS K94800 - DIN 17745 - W 1.3922 - A54-301

Chemical composition

| Elements (% weight) | Ni | Fe |
|---------------------|----|-----|
| Typical value | 48 | Bal |

Standard delivery & dimensions available

| | |
|-----------|-----------------|
| Form | Strip - Sheet |
| Thickness | 0.10 to 3.50 mm |
| Width | 10 to 640 mm |
| Length | 500 to 3500 mm |
| Temper | Annealed / Hard |

Physical properties

| Properties | Units | Values |
|-------------------------------------------|--------------------|--------------------|
| Density | g/cm ⁻³ | 8.20 |
| Resistivity at 20° | μohm.cm | 50 |
| Melting T° | °C | 1425 |
| Curie T° | °C | 450 |
| Specific heat | J/g °C | 0.50 |
| Thermal conductivity at 20° | W/m/°C | 16 |
| | 30 to 400°C | 30 to 550°C |
| Average linear CTE (10 ⁻⁶ /°C) | 8.2 to 9.2 | 9.6 to 10.3 |

Mechanical properties (typical values)

| Temper | Hardness Hv | Ultimate strength (MPa) | Yield strength (MPa) | Elongation % | Young modulus KN/mm ² |
|----------|-------------|-------------------------|----------------------|--------------|----------------------------------|
| Annealed | 140 | 540 | 270 | 30 | 160 |
| Hard | 220 | 740 | 710 | 5 | |

Available Forms

IMPHY N48 is delivered in cold rolled strip. Contact us for other specific formats.

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The data enclosed in this document are 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.

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