Controlled expansion

IMPHY N42

IMPHY N42 is an iron-nickel controlled expansion alloy suitable to glass sealing, with optimal chemical composition to obtain hermetic seals. Typical applications are integrated circuit lead frames, electron gun components, enamelled resistor ferrules and moulds for composite parts.

International standards

ASTM F30 - UNS K94100 - DIN 17745 - W 1.3917 - A54-301 - SEW 385

Chemical composition

Elements (% weight)	Ni	Fe
Typical value	42	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}	8.15
Resistivity at 20°	µohm.cm	63
Melting T°	°C	1425
Curie T°	°C	330
Specific heat	J/g °C	0.50
Thermal conductivity at 20°	W/m/°C	12.5

	30 to 300°C	30 to 450°C
Average linear CTE (10^{-6}/°C)	4.0 to 4.7	6.7 to 7.4

Mechanical properties (typical values)

Temper	Hardness Hv	Ultimate strength (MPa)	Yield strength (MPa)	Elongation %	Young modulus KN/mm²
Annealed	140	500	300	30	145
Hard	210	650	620	5	

Available Forms

IMPHY N42 is delivered in cold rolled strip.
Contact us for other specific formats.

www.aperam.com
nickel.alloys@aperam.com
YouTube

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