

VITROPERM[®] 800 / 500

NOMINAL ALLOY COMPOSITION

Alloy	Fe	Ni	Co	Cu	Nb	Si	B	
VP 800	Balance (82.8)	–	–	1.3	5.6	8.8	1.5	(wt-%)
	73.6	–	–	1.0	3.0	15.5	6.9	(at.-%)

MAGNETIC PROPERTIES¹

Property	Value	Unit
Saturation polarization (as cast / amorphous @ 20 °C)	1.21	T
Saturation polarization (nanocrystalline @ 20 °C)	1.24	T
Saturation magnetostriction (as cast / amorphous)	25	ppm
Saturation magnetostriction (nanocrystalline)	sl < 0.5	ppm
Permeability (VP 800 F / transverse field annealing)	20,000 – 200,000	(μ_{\max} @ 50 Hz)
Permeability (VP 800 R / annealing without magn. field)	≤ 600,000	(μ_{\max} @ 50 Hz)
DC coercivity (VP 800 F / transverse field annealing)	0.5	A/m
DC coercivity (VP 800 R / annealing without magn. field)	1	A/m
Magnetic power loss (VP 800 F @ 100 kHz, 0,3 T)	≤ 80	W/kg
Magnetic power loss (VP 800 R @ 50 Hz, 1,0 T)	0.03	W/kg
Curie temperature	600	°C

PHYSICAL PROPERTIES¹

Property	Value	Unit
Mass density (as cast / amorphous)	7.17	g/cm ³
Mass density (nanocrystalline)	7.35	g/cm ³
Electrical resistivity (nanocrystalline)	1.15	$\mu\Omega\text{m}$
Coefficient of thermal expansion (20 - 100 °C, as cast)	8	10 ⁻⁶ /K
Crystallization temperature (as cast / amorphous)	510	°C

AVAILABLE DIMENSIONS

Property	Value	Unit
Thickness (computed average thickness from weight)	16 ± 2 / 18 ± 3	μm
Widths slit to width	2.0 ... 60.0 ± 0.15	mm
Widths width as cast	25.0 ... 58.0 ± 0.5	mm
	60.0 ... 66.0 ± 1.0	

¹ Typical values, not part of a specification

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ADVANCED MAGNETIC SOLUTIONS