

VITROPERM[®] 220 / 250

NOMINAL ALLOY COMPOSITION

Alloy	Fe	Ni	Co	Cu	Nb	Si	B	
VP 220	Balance (66.4)	11.6	8.1	1.0	5.3	5.9	1.7	(wt-%)
	60.5	10.1	7.0	0.8	2.9	10.7	8.0	(at.-%)
VP 250	Balance (74.2)	11.6	–	1.0	5.3	6.2	1.7	(wt-%)
	67.2	10.0	–	0.8	2.9	11.2	8.0	(at.-%)

MAGNETIC PROPERTIES¹

Property	VP 220	VP 250
Saturation polarization (as cast / amorphous @ 20 °C)	1.19 T	1.18 T
Saturation polarization (nanocrystalline @ 20 °C)	1.24 T	1.24 T
Saturation magnetostriction (as cast / amorphous)	25 ppm	23 ppm
Saturation magnetostriction (nanocrystalline)	10 - 11 ppm	8 - 9 ppm
Permeability (transverse field annealing ½ h @ 510 °C)	2,400	4,000
Permeability (transverse field annealing ½ h @ 530 °C)	2,000	3,200
Permeability (transverse field annealing ½ h @ 550 °C)	1,800	2,800
DC coercivity (F annealed / flat hysteresis loop)	> 5 A/m	> 3 A/m
Curie temperature	600 °C	600 °C

PHYSICAL PROPERTIES¹

Property	VP 220	VP 250
Mass density (as cast / amorphous)	1.19 T	1.18 T
Mass density (nanocrystalline)	1.24 T	1.24 T
Electrical resistivity	25 ppm	23 ppm
Coefficient of thermal expansion (20 - 100 °C)	10 - 11 ppm	8 - 9 ppm
Crystallization temperature	10 - 11 ppm	8 - 9 ppm

AVAILABLE DIMENSIONS

Property	Value	Unit
Thickness (computed average thickness from weight)	20 ± 3	µm
Widths slit to width (others on request)	2.0 ... 50.0 ± 0.25	mm
Widths width as cast (others on request)	20.0 ... 54.5 ± 0.5	mm

¹ Typical values, not part of a specification

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Published by VACUUMSCHMELZE GmbH & Co. KG, Hanau, Oktober 2021
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