



Preliminary datasheet

VACOFLUX[®] 27

BULK AND ROD MATERIAL

Composition

27% Co - Fe Balance
IEC 60404-8-6 F31 / ASTM A801-09 Alloy Type 2

Main properties

- Highest saturation of 2.4 T
- High ductility compared to 49% Cobalt-Iron alloys

Applications

High flux guiding elements, e.g. pole pieces, back irons, etc.
High power actuators for valves or switches

Magnetic properties (typical values)

Coercivity	H_C	150 A/m
Saturation polarisation	J_S	2.38 T
Maximum permeability	μ_{max}	3000
Saturation magnetostriction	λ_S	approx. 40 ppm
Curie temperature	T_C	approx. 950 °C

Static virgin curve (typical values)

Magnetic field strength	H (A/m)	200	500	1000	2000	4000	10k	20k	40k
Induction	B (T)	0.60	1.45	1.70	1.84	1.95	2.13	2.30	2.43

Physical properties (typical values)

Density	ρ	7.99 g/cm ³
Specific electrical resistivity	ρ_{el}	0.15 $\mu\Omega$ m
Specific heat capacity	c_p	0.44 J/(gK)
Thermal conductivity	λ	67 W/(mK)
Thermal expansion coefficient	α	10.8 · 10 ⁻⁶ 1/K (20...200 °C)
Young's Modulus	E	200 GPa

Mechanical properties (typical values)

Tensile strength	R_m	550 MPa
Yield strength	$R_{p0.2}$	240 MPa
Elongation	A	30%
Hardness	HV 10	170

Forms of supply and conditions

Hot rolled rods, peeled surface	∅ 15 - 70 mm
Cold drawn rods	∅ 3 - 15 mm
Bulk material	on request

Important note: To achieve the typical values a final magnetic annealing is necessary

For optimum magnetic properties: 10 h / 920 °C, dry hydrogen atmosphere recommended

Simulation data available on request