



Preliminary datasheet

VACOFLUX[®] 9CR

BULK AND ROD MATERIAL

Composition

9% Co - 10% Cr - 2% Mo - 1% Al - Fe Balance

Main properties

- High saturation of 1,8 T for maximum actuator force
- Excellent corrosion resistance comparable to 13% chromium steel
- Outstanding electrical resistivity of 0,79 $\mu\Omega\text{m}$ for optimum dynamics

Applications

Actuators for valves or switches in corrosive media, e.g. gasoline injection, gas valves and hydraulic or pneumatic systems

Magnetic properties (typical values)

Coercivity	H_C	1,5 A/cm
Saturation polarisation	J_S	1,8 T
Maximum permeability		3000
Saturation magnetostriction	λ_S	approx. 30 ppm
Curie temperature	T_C	approx. 800 °C

Static virgin curve (typical values)

H (A/cm)	1	2	5	10	20	50	100	200
B (T)	0,19	0,71	1,14	1,30	1,42	1,55	1,66	1,82

Physical properties (typical values)

Density	ρ	7,75 g/cm ³
Specific electrical resistivity	ρ_{el}	0,79 $\mu\Omega\text{m}$
Specific heat capacity	c_p	0,46 J/(gK) (20...200 °C)
Thermal conductivity	λ	19,5 W/(mK) (20...200 °C)
Thermal expansion coefficient	α	$10,9 \cdot 10^{-6}$ 1/K
Young's Modulus	E	180 GPa

Mechanical properties (typical values)

Tensile strength	R_m	490 MPa
Yield strength	$R_{p0,2}$	330 MPa
Elongation	A_{L100}	35%
Hardness	HV 10	170

Forms of supply and conditions

Hot formed rods	Ø 15 - 70 mm
Cold drawn rods	Ø 3 - 15 mm
Bulk material	on request
Standard delivery condition	magnetically final annealed, where indicated additional annealing of the parts necessary