

RES

Sintered SmCo

MATERIAL TYPE

Metallic Alloy

SURFACE PROTECTION

Not necessary

ORIENTATION

Axial / Diametral

MAGNETIZATION

Single or multiple poles on the functional surface

TEMPERATURE BEHAVIOR

		Sm ₁ Co ₅	Sm ₂ Co ₁₇
Br TEMPERATURE COEFFICIENT*	% / °C	- 0,045	- 0,035
HcJ TEMPERATURE COEFFICIENT*	% / °C	- 0,19	- 0,24

*The temperature coefficients are nominal reference values only. They can vary for different temperatures and don't need to be linear.

**The maximum operating temperature is depending on the magnet shape, size and on the specific application.

PHYSICAL AND MECHANICAL TYPICAL PROPERTIES

		Sm ₁ Co ₅	Sm ₂ Co ₁₇
CURIE TEMPERATURE	°C	710	770
RECOIL PERMEABILITY	(μr)	1,03	1,05
SATURATION FIELD	kOe	> 25	> 50
ELECTRICAL RESISTIVITY	Ωm	60 × 10 ⁻⁸	80 × 10 ⁻⁸
COMPRESSIVE STRENGTH	N/mm ²	~ 850	~ 800
DENSITY	g/cm ³	~ 8,3	~ 8,3
FLEXURAL STRENGTH	N/mm ²	100-150	100-150
TENSILE STRENGTH	N/mm ²	59	40
VICKERS HARDNESS	HV	~ 600	~ 600
YOUNG'S MODULUS	N/mm ²	150 × 10 ³	180 × 10 ³
SPECIFIC HEAT	kcal/kg/°C	0,08-0,09	0,08-0,09
THERMAL CONDUCTIVITY	kcal/m/hr/°C	8	8 - 9
THERMAL EXPANSION COEF ⊥ c	10 ⁻⁶ /°C	7	10
THERMAL EXPANSION COEF // c	10 ⁻⁶ /°C	12	5



Sm₁Co₅

GRADES	Br		HcB		HcJ		BH max		Max. Working Temp.**
	G	T	Oe	kA/m	Oe	kA/m	MGOe	kJ/m ³	
RES 159 / 183	9.200 - 9.600	0,92 - 0,96	8.900 - 9.500	710 - 756	≥ 23.000	≥ 1.830	20 - 22	159 - 175	≤250
RES 175 / 183	9.600 - 10.000	0,96 - 1,00	9.300 - 9.900	740 - 788	≥ 23.000	≥ 1.830	22 - 24	175 - 191	≤250

Sm₂Co₁₇

GRADES	Br		HcB		HcJ		BH max		Max. Working Temp.**
	G	T	Oe	kA/m	Oe	kA/m	MGOe	kJ/m ³	
RES 207 / 143	10.300 - 10.800	1,03 - 1,08	9.500 - 10.200	756 - 812	≥ 18.000	≥ 1.433	26 - 28	207 - 223	≤300
RES 223 / 143	10.800 - 11.000	1,08 - 1,10	9.900 - 10.500	788 - 835	≥ 18.000	≥ 1.433	28 - 30	223 - 239	≤300
RES 231 / 143	11.000 - 11.500	1,10 - 1,15	10.200 - 10.800	812 - 860	≥ 18.000	≥ 1.433	29 - 32	231 - 255	≤300
RES 207 / 199	10.300 - 10.800	1,03 - 1,08	9.500 - 10.200	756 - 812	≥ 25.000	≥ 1.990	26 - 28	207 - 223	≤350
RES 223 / 199	10.800 - 11.000	1,08 - 1,10	9.900 - 10.500	788 - 835	≥ 25.000	≥ 1.990	28 - 30	223 - 239	≤350
RES 231 / 199	11.000 - 11.500	1,10 - 1,15	10.200 - 10.800	812 - 860	≥ 25.000	≥ 1.990	29 - 32	231 - 255	≤350