

Material information

Neodymium (NdFeB) Samarium-Cobalt (SmCo)											
Description		Remanence		Energy product		Coercivity		Coercivity		Working temp.*	Temp. coeff.
		Br (mT)		(BxH) max. (kJ/m ³)		Hcb (kA/m)		Hcj (kA/m)		Tmax.	to Br
Material (selection)	DIN / IEC 60404-8-1	typ.	min.	typ.	min.	typ.	min.	typ.	min.	°C	%/°C
NdFeB	220/95	1120	1080	240	220	840	800	1000	950	80	-0.10
NdFeB	220/110	1120	1080	240	220	840	800	1200	1100	100	-0.10
NdFeB	220/130	1120	1080	240	220	840	800	1400	1300	120	-0.10
NdFeB	220/160	1120	1080	240	220	840	800	1700	1600	150	-0.10
NdFeB	220/200	1120	1080	240	220	840	800	2100	2000	180	-0.10
NdFeB	220/220	1120	1080	240	220	840	800	2300	2200	200	-0.10
NdFeB	220/280	1120	1080	240	220	840	800	2900	2800	220	-0.10
NdFeB	240/95	1170	1130	260	240	880	840	1000	950	80	-0.10
SmCo	160/200	950	900	180	160	650	620	2100	2000	350	-0.03
SmCo	175/140	1000	950	190	175	650	620	1500	1400	350	-0.03
SmCo	190/120	1050	1000	210	190	720	680	1300	1200	350	-0.03

* The max. operating temperature depends significantly on the dimensions of the magnet (magnet system).
 other materials on request

Useful information

Neodymium and Samarium-Cobalt magnets are high energy permanent magnets and consist mainly of alloys of rare earth metals (neodymium, samarium) and other metals (e.g., iron, cobalt).

The most common shapes are square, disc, ring and segment magnets. However, other shapes can be made.

Like all sintered metals, rare-earth magnets, in particular SmCo magnets, are very hard and brittle and are therefore sensitive to impacts.

At low temperatures, SmCo magnets are relatively resistant to moisture, solvents and alkalis, but not to acids and salt solutions. NdFeB magnets corrode in moisture and react strongly to acids and salt solutions. By galvanic or other coatings, the magnets can be protected against corrosion.

Because of their high hardness a mechanical machining of sintered rare earth magnets is only possible with diamond tools.

Process flow

