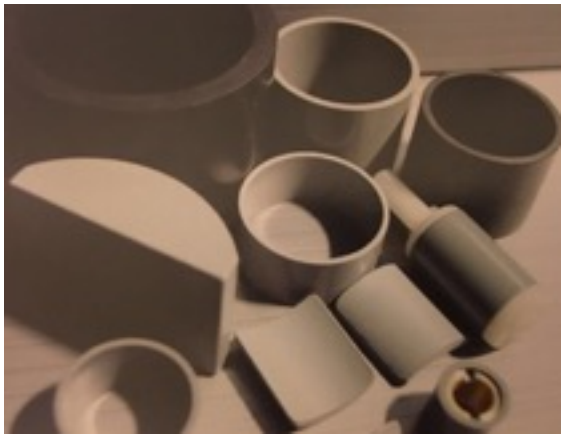
MQ1 General Information



The bonded NdFeB Magnets material can be produced with close tolerances off tool, with little or no finishing required. The energy product of the bonded form is much lower than that of the sintered form - up to 13 MGOe.

Compression is a technique whereby a special form of NdFeB powder is blended with a plastic carrier material, die pressed and then heated. Parts were made in this way can be of complex shapes and come off the tool with close tolerances. Injection NdFeB powder is blended with a plastic material and injection molded. The resulting parts have energy products in the 7 MGOe range, but can be made with extremely intricate shapes.

Bonded NdFeB is easily machined. Coolants must be used while machining this material in order to avoid spontaneous combustion of powder. Machining this material removes a layer of protective coating, and re-coating for corrosion resistance may be necessary.

Isotropic bonded NdFeB materials can be magnetized in any direction, or with multiple poles. Special magnetizing fixtures are required in order to achieve multiple pole magnetization. Such multiple pole fixtures may cost several thousand dollars depending on complexity of design and production rate requirements.

Magnetic properties of NdFeB deteriorate rapidly above about 130 Centigrade, depending on the grade of material, and the permeance coefficient of the magnet in operation. The higher the permeance coefficient the magnet operates at, the higher the temperature it will withstand. High Hci NdFeB materials operating at a high permeance coefficient can operate to about 210 Centigrade. Shapes, Sizes, and Grades Available Isotropic bonded NdFeB can be specially formulated to meet special requirements, with energy products from 1 to 12MGOe, as required.

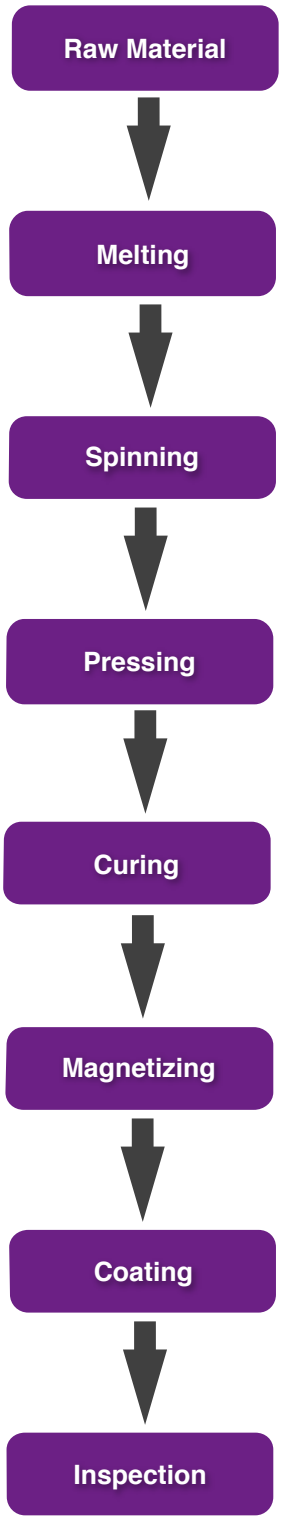
Magnetic Property

Material Code	Residual Induction	Coercive Force	Intrinsic Coercive Force	Max. Energy Product	Working Temperature
	Br(kGs)	Hcb(kOe)	Hcj(kOe)	BHmax(MGOe)	°C
BN4	3.5~4.5	3.0~4.0	7.0~8.5	3.5~4.5	~150
BN5	4.6~5.5	3.5~4.0	7.5~9.0	4.6~5.5	~150
BN6	5.6~6.0	3.8~4.2	7.0~9.0	5.6~6.5	~150
BN7	6.0~6.3	4.2~5.0	7.0~10.0	6.6~7.5	~150
BN7L	5.9~6.3	4.6~4.9	10.0~14.0	6.6~7.5	~160
BN8	6.0~6.5	4.8~5.4	8.0~10.0	7.6~8.5	~150
BN8L	6.2~6.8	4.9~5.5	10.0~14.0	7.6~8.5	~160
BN9	6.6~7.0	5.1~5.6	8.0~10.0	8.6~9.5	~150
BN9L	6.6~7.0	5.1~5.6	10.0~15.0	9.0~10.0	~160
BN10	6.8~7.3	5.2~5.8	8.0~10.0	9.6~10.5	~150
BN12	7.1~7.5	5.5~5.9	8.0~10.0	10.6~12.0	~150

Physical Property

Average Reversible Temperature Coefficient	0.09-0.10	%/℃
Coefficient of Thermal Expansion[25-200℃]	4.8X10(-6)	℃
Compressive Strength	96	Kg/cm
Curie Temperature Tc	400℃	℃
Electrical Resistivity	14000μΩ-cm	μΩ.cm
Hardness	35~45	HRB
Required Magnetizing Force [open Circuit]	>25KOe	KOe

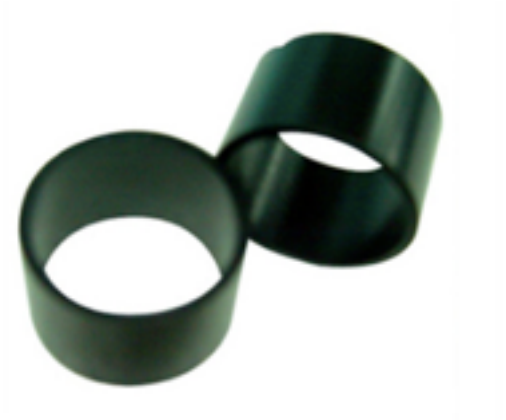
Process Flow



Surface Coating Types

Coating Type	Common Color		Quality
Epoxy	Black	Grey	Good
Partlene	Transparent		Excellant

MQ2/ 3 General Information



Hot-pressed NdFeB magnets with two types:

- MQ2, hot-pressed isotropic NdFeB magnet
- MQ3, hot-extruded anisotropic NdFeB magnet

These two-type magnets can be used in diverse applications, such as electronic power steering motors, hybrid electric vehicles traction motors, servo motors…

MQ3 magnets provide magnetic properties similar to sintered NdFeB magnets which are able to reach higher performance levels with zero or significantly reduced heavy rare earth content.

MQ2 magnets are produced through compression by rapidly quenched NdFeB magnetic powder under high temperature. MQ3 magnets are mainly anisotropic radially-oriented ring magnet, which is produced through compression and extrusion deformation by rapidly quenched NdFeB magnetic powder under high temperature, more features as followed:

- High magnetic performance, maximum magnetic energy product of ring magnet reaching 360kJ/m3 or 45MGOe
- Uniform radial magnetic performance, which guarantee motor's silent operation and smooth torque output
- High heat-resistance, working temperature reaching 180℃
- Precise dimensional tolerance for assembly.
- Waves of magnet ring can be changed to sin wave or square wave thru magnetizing coils.
- Convenient for motor assembling
- Nanometer crystalline structure with high density and enhanced use in high rotate speed of motors
- ED coating reached 35μm max. to prevent from magnet oxidization in bad environment.

Magnetic Property

Material Code	Residual Induction	Coercive Force	Intrinsic Coercive Force	Max. Energy Product	Density
	Br(kGs)	Hcb(kOe)	Hcj(kOe)	BHmax(MGOe)	g/cm3
HP16H	8.2~8.8	7.0~7.6	16.0~20.0	15.0~17.0	7.6
HP16SH	8.0~8.6	7.1~7.7	21.0~23.0	21.0~23.0	7.7
HP31SH	10.6~11.8	10.2~11.0	20.0~24.0	29.0~32.0	7.7
HP32H	11.2~12.1	10.2~11.1	14.0~18.0	30.0~34.0	7.6
HP35SH	12.0~12.8	11.1~11.9	18.0~22.0	33.0~37.0	7.7
HP43	12.8~13.5	10.4~12.1	11.0~14.0	40.0~44.0	7.6
* Please contact with us to have more material properties.					