

NEODYMIUM IRON-BORON

Neodymium-iron-boron magnets are sintered magnets, composed of Neodymium, iron and boron powder.

A surface treatment: zinc, nickel, gold or epoxy is essential to protect this material against corrosion (due to environmental aggression).

Density 7,5.



HOLDING FORCE

- ▶ Magnetic force is optimal when the magnet is in contact with a mild steel frame, flat, clean and rather thick. It is lower with allied steels and cast iron (less 30% for cast iron).
- ▶ It is lower in presence of an air gap (space between the part to magnetize and the polar face of the magnet).
- ▶ It is decreasing by 0,22% every degree C by propitious circuits (see besides curve).

INDUCTION ON SURFACE

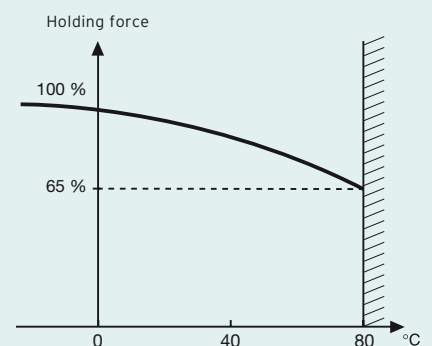
- ▶ The maximum value of induction in surface at 20°C is about 5000 Gauss for Neodymium Ferbore flat pot magnets.
- ▶ This value is decreasing by 0,22% every degree C when temperature is increasing

MECHANICAL RESISTANCE

- ▶ These ceramics are very fragile.
- ▶ They must be handled carefully.
- ▶ To avoid magnets attraction during handling we advise to put them on a mild steel plate.
- ▶ Do not shock or squeeze.

RESISTANCE TO TEMPERATURE

- ▶ Maximal working temperature is about 80°C, because of Hcj sensitivity to temperature (0.66% every degree C).
- ▶ The induction losses are reversible so far we stay in the limit of working temperature of the material. It is 80°C in open circuit with standard grade. There are several NdFeB grades up to 180°C.



- ▶ These are the magnets with the highest specific energy (BHmax) at room temperature.
- ▶ There is a wide range of grades depending on the operating temperature.
- ▶ The Neodymium-Iron-Boron grade presented in this catalogue is N35 (temperature at 80°C)

Grade	N35
Br Typical (T)	1,21
Hcb Typical (kA/m)	890
Hcj Typical(kA/m)	955
BH max Typical (kJ/m ³)	279

