

HIGH PERFORMANCE HOT-PRESSED MAGNETSAbstract

Isotropic hot-pressed iron-rare earth metal permanent magnets are provided wherein the hot-pressed permanent magnets exhibit magnetic remanences of at least 9 kG, and most typically about 10 kG. Preferred compositions include a relatively low rare earth content coupled with an optimal amount of boron. The preferred composition is, on a weight percent basis, from about 5 to about 25 percent rare earth, most preferably about 10 to about 20 percent rare earth, from about 0.5 to about 4.5 percent boron, most preferably from about 0.8 to about 4.0 percent boron, wherein the total combination of the rare earths and boron ranges from about 9 percent to about 26 percent of the composition, most preferably from about 12 percent to about 22 percent, and optionally from about 2 percent to about 16 percent cobalt, with the balance being essentially iron.

FIGURE 1