Effect of Fe substitution for Co in $GdCo_4B$ compound

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Abstract: The effect of Fe substitution for Co at small concentrations (x ?? 0.1) on magnetic properties of $Gd(Co_{1-x}Fe_x)_4B$ compounds has been studied. Upon substitution, the compensation temperature is nearly constant, the Curie temperature changes slightly whereas the magnetic anisotropy is modified significantly. The Fe-concentration dependence of the magnetic anisotropy has been analysed by means of the individual site anisotropy (ISA) model. The magnetic phase diagram of the $Gd(Co_{1-x}Fe_x)_4$ compounds is discussed. ?? 1995.

Index Keywords: Annealing; Cobalt; Crystal structure; Ingots; Iron; Magnetic anisotropy; Magnetic properties; Melting; Phase diagrams; Substitution reactions; Temperature; X ray diffraction; Arc melting; Compensation temperature; Curie temperature; Gadolinium cobalt boron compound; Individual site anisotropy model; Gadolinium compounds

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