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# Magnetic properties and crystallite sizes of HDDR powders obtained from PrFeCoBNb based alloys

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The first goal of this work involved the study of HDDR powders obtained from annealed alloys with a general formula: PrxFe77.9-xCo16B6Nb0.1 (x = 12; 12.5; 13; 13.5 and 14). The alloys were processed at desorption/recombination temperature of 840ºC. The highest magnetic properties were obtained with 13.5 at. % Pr (Br= 1000mT and iHc= 890mT). The alloy with a minimum praseodymium content (12 at. %) exhibited the lowest magnetic properties (Br= 350mT e iHc= 120mT). The second aim of the work involved the characterization of HDDR powders using X-ray diffraction analysis for phase quantification and crystallite medium sizes determination of the hard magnetic phase. The processed powders were morphologically characterized by scanning electron microscopy (SEM).