

## Effect of Impregnation on Permalloy Powder Core

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Permalloys (Fe-Ni alloys) are of great commercial interest due to their high permeability and high saturation magnetization. The magnetic properties of permalloy powder core are primarily determined by shape, particle size, and density. The magnetic flux density is strongly related to the sample's purity and density. Permalloy powder core is normally coated by an impregnation solution after annealing to strengthen it mechanically. However, the magnetic properties of permalloy powder core are degraded after impregnation processing. To envisage the origin for it, we carefully investigated the relationship between crystal structure, microstructure, and magnetic property. Details will be presented for a discussion.