



Kuraray-Poval / Mowiol® - Ferrite cores

The production of ferrite cores as bodies for high-frequency coils uses a procedure familiar from the manufacture of special ceramic components. Here again an aqueous slip, after being mixed with Mowiol solution, is converted by spray drying into a powdery dry compound, cold compressed in a mould, then machined and finally sintered.

In ferrite core manufacture, fully hydrolyzed Mowiol grades are preferred because of their lower tendency to foam.

The core material is mainly ferric oxide Fe_2O_3 with a maximum alkali impurity of 0,03%. Only in this way can high quality ferrite material be obtained. Similar purity requirements relating to electrolyte content should be imposed on the temporary binder.

Because of the high pigment-binding power, very small quantities of Mowiol (0,1 - 0,5%, relative to solids component) are sufficient to raise the mechanical strength of the pressed molding substantially before sintering. For the low-viscosity Mowiol grades concerned it is possible with a maximum of 0,5% sodium oxide to guarantee a very low ash content, so that the sodium content introduced by the temporary binder Mowiol is smaller by some orders of magnitude than that of the oxide base material. As a temporary binder Mowiol burns away almost completely at the high sintering temperature of 1100 - 1400°C.