

Influence of Fe₂O₃ Content on the Electrical Performance of Barium-calcium Sulpho-ferritealuminate Minerals

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The barium-calcium sulpho-ferritaluminate minerals are synthesised by using pure chemical reagents as raw materials. The resistance ratios of the hydrated minerals are among 10^4 - 10^6 $\Omega\cdot\text{cm}$, indicating that they are semiconductor materials. The electrical performances of the hydrated samples of barium-calcium sulpho-ferritaluminate minerals on 1 day, 7 days and 28 days were studied. Through testing the resistance ratio, impedance, relatively dielectric constant and dielectric loss etc., the electrical properties of barium-calcium sulpho-ferritaluminate minerals were analyzed. The results showed that the resistance ratio, impedance decreased first and then increased with the increase of Fe₂O₃ content; but the dielectric constant appeared in the opposite direction; the dielectric loss showed randomly on the early hydration, while increased first, and then decreased on the late hydration.