

عنوان مقاله:

(Effect of CO₂ Partial Pressure on the Thermal Decomposition Kinetics of Zinc Carbonate Hydroxide) (TECHNICAL NOTE)

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خلاصه مقاله:

In this work, the effect of carbon dioxide partial pressure on the calcination kinetics of high purity zinc carbonate hydroxide has been studied. Non-isothermal analysis has been performed on samples at different CO₂ partial pressures by TGA and DTA. It has been found that the calcination behaviour of this material corresponds to the shrinking core model and the reaction mechanism is phase boundary controlled. The calcination reaction of zinc carbonate hydroxide starts at ۲۴۰ °C. Increasing the carbon dioxide partial pressure can result in an increase in the reaction start temperature of up to ۳۰ °C. The activation energy for the reaction is calculated as ۱۸۰ ± ۵ kJ/mol at significant CO₂ partial pressures.

کلمات کلیدی:

Thermal decomposition, Kinetics, Zinc carbonate hydroxide, CO₂ partial pressure

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