EFFECT OF $MgCl_2$ SOLUTION ON THE SYNTHESIS OF PRECIPITATED CALCIUM CARBONATE FROM LIMESTONE BY CARBONATION METHOD

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Abstract

Precipitated Calcium Carbonate was synthesized by carbonation method from the limestone. In this study, the Mg with varying mass was added to the solution of $MgCl_2$ i.e. 1, 2, and 3 grams. Synthesis was performed using $CaCl_2$ solution at room temperature and CO_2 flow rate of 3 SCFH/ 1.41 $lmin^{-1}$. The characterisations employing XRD (X-ray Difraction), optical microscopy and SEM (Scanning Electron Microscopy) were conducted. The addition of $MgCl_2$ solution affect the shape, morphology, and size of samples produced. Synthesis without the addition of $MgCl_2$ produced a single phase calcite with the size of crystals of 194 nm, while that with the addition of $MgCl_2$ results in the phases of calcite, magnesian calcite, and magnesium carbonate .

Key words: precipitated calcium carbonate, limestone, carbonation, $MgCl_2$