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Thermal Analysis of Salem Magnesite

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Abstract: Thermal decomposition behaviour of magnesite sample has been studied by thermogravimetric (TG) measurements. Differential thermal analysis (DTA) curve of magnesite the two endothermic peaks observed in magnesite are essentially due to de-carbonation of magnesium oxide and carbon-di-oxide respectively. The TG data of the decomposition steps have also been analysed using differential, difference-differential and integral methods, viz. **Freeman–Carroll, Horowitz–Metzger, Coats–Redfern** methods. Values of activation entropy, Arrhenius factor, and order of reaction have been compared. DSC curves for three of the magnetite samples formagnesite produced at 789, 786, and 800°C. Magnesite at 780°C a magnetite to MgO, but the sharp magnesite transition observed for magnetite formed at lower temperatures has been replaced by a very broad transition near at 789°C. It is interesting to note that the temperature for themagnesite to MgO transition decreased as the temperature for magnesite formation decreased.

Keywords : Magnesite, TG,DTA,DSC.

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