

### Synthesis of Magnesium Oxide for Fluoride Removal

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In this study, we report on fluoride removal properties of magnesium oxide. Magnesium oxides were prepared by calcination of reaction product of magnesium chloride hexahydrate and sodium carbonate. The fluoride removal properties of magnesium oxides were investigated, including adsorption kinetics, adsorption isotherms, and influences of coexisting anions and pH. The adsorption capacity was larger than 140 mg/g at a pH of 7.0. The effects of anions on fluoride removal were also investigated. The results indicated that phosphate was the greatest competitor of fluoride for adsorptive sites. In addition, our experimental evidence shows that fluoride removal happened through isomorphous substitution of fluoride in brucite.