

### High Surface Area MgO Synthesis and Its Application in Methyl Mercaptan and 2-CEES Removal

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MgO is one of promising materials which is widely used as high performance nano metallic oxide due to the special properties of high surface area, high capacity and rapid adsorption rate. Several synthesis methods have been developed to obtain nano MgO. To get higher surface area MgO nanoparticles, Mg(OH)<sub>2</sub> from Aerogel method of hypercritical drying procedure has been used in order to figure out the influence of calcination conditions on the behavior of nano MgO. The precursor was prepared though a typical sol-gel method with high surface area. A series of MgO obtained from the same Mg(OH)<sub>2</sub> precursor with different specific calcination steps were synthesized and been used for methyl mercaptan adsorption tests and other characterization tests . By comparing these tests results we can find out a suitable calcination procedure for high performance MgO which can significantly improve the quality of this kind of nanoparticles just by controlling the calcination step. With this high surface area MgO, we carry on the study in methyl mercaptan and 2-CEES removal and some valuable data was obtained from this research.