

### Ester Hydrogenolysis over Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> catalysts : Effect of Cu/ZnO ratio

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Hydrogenolysis of ester was studied over Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> catalysts. The kinetic data were measured by changing H<sub>2</sub> partial pressure, ester partial pressure, and reaction temperature on the basis of the empirical power-law equation. Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> catalysts were prepared by a coprecipitation technique, where the Cu/Zn ratio and the support were changed. The catalysts were characterized using XRD, H<sub>2</sub>-TPD, O<sub>2</sub>-TPD, and N<sub>2</sub>O chemisorption. Among the supports tested in this study, Al<sub>2</sub>O<sub>3</sub> exhibited the highest ester yield. Furthermore, it was found that the Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> catalyst with the Cu/Zn ratio of 5/1 showed the highest activity in ester hydrogenolysis due to the largest surface area of active Cu species (The authors would like to acknowledge funding from the SK Energy Corporation).