

The direct gas phase epoxidation of propylene over Nb-promoted Ag-Mo/Al₂O₃ catalyst

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Epoxidation of propylene to propylene oxide by molecular oxygen was studied over Ag-Mo/Al₂O₃ and Nb added one catalysts. The catalysts were prepared by impregnation methods and epoxidation of propylene over the above catalysts were investigated with a fixed-bed quartz reactor and online gas chromatog. in ambient pressure. The volume percent of reactant gas is 70% C₃H₆, 10% O₂, and balance N₂ without any gaseous additive. The above catalyst was characterized by SEM, EDX and XRD. At a space velocity of 18000 h⁻¹ and reaction temp. of 350 °C, 0.14 % C₃H₆ conversion and 64 % selectivity to propylene oxide were achieved over the Nb promoted AgMo/Al₂O₃ catalyst. This numerical value is higher than non-Nb AgMo/Al₂O₃ catalyst. Also, according as rise in temperature, selectivity decline curve of Nb promoted AgMo/Al₂O₃ is slower than non-Nb AgMo/Al₂O₃.