

Effect of Reaction Pressure and Carrier Gas on Toluene Disproportionation over Molybdenum-ZSM-5 Catalyst.

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Abstract

This study was aimed at evaluating the effects of reaction pressure and temp. on toluene disproportionation using a ZSM-5-based catalyst impregnated with molybdenum. The results of the study showed that both toluene conversion and xylene selectivity were strongly dependent on temp., pressure, and the kind of carrier gas used. Toluene conversion compared at the same temp. and pressure is higher when nitrogen instead of hydrogen was used as the carrier gas. For both carrier gases, toluene conversion increased with both pressure and temp. Also, catalyst deactivation was more rapid and more severe with nitrogen as the carrier gas than with hydrogen.