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Effect of the defect structure of the alumina support on the adsorption properties of supported palladium particles in the hydrogenation of 1,3-butadiene

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Abstract

Supported palladium catalysts based on γ-Al_2O_3 with varying acidity were investigated. The acidity of the support was varied by introducing to the aluminum hydroxide of acetic acid. It was established that the introduction of acid does not change the phase composition, but is accompanied by a change of textural characteristics and the increase in the number of acid centers. The subsequent deposition of palladium was accompanied by the formation of highly dispersed state of the active component with a strong metal-support interaction. This caused an increase in the conversion of 1,3-butadiene hydrogenation and decrease in selectivity to butenes.