347e Use of Composite Activated Alumina Adsorbents for Separation of Hydrocarbons from Olefin Containing Streams

F. Handan Tezel, Timothy C. Golden, Jon Mogan, and Bruno Morin

Adsorption of ethylene, acetylene, propylene and propyne has been studied on several activated alumina based adsorbents. Henry's Law constants, heat of adsorption values as well as adsorption isotherms of these components were determined. Concentration Pulse Chromatographic technique was used for the determination of Henry's Law constants and heat of adsorption values. For the determination of adsorption isotherms, a constant volume system was used. Coking studies were also carried out to see any coke formation will happen during repeated cycles of adsorption and desorption. Adsorbents studied include plain activated alumina, its chemically modified forms, as well as its composites with zeolites.

Results show that propyne was the most strongly adsorbed component with the highest Henry's Law constant and the highest heat of adsorption values.