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(54) Title: HIGHLY SELECTIVE SHELL IMPREGNATED CATALYST OF IMPROVED SPACE TIME YIELD FOR PRODUCTION OF VINYL ACETATE

(57) Abstract: A shell impregnated catalyst of Pd-Au produced on a silica support to have a Pd loading of 1.8 g/L of catalyst to about 7.2 g/L and a Au to Pd weight ratio of 0.3 to 2.0 by impregnating the support with aqueous solutions of palladium and gold salts or acids and thereafter precipitating water insoluble compounds of Pd and Au on the with alkali metal silicate or hydroxide solutions, then dried, and the surface precipitated compounds of Pd and Au are then reduced by reaction with ethylene or hydrogen at a temperature of greater than 150 °C up to 310 °C or with hydrogen up to 299 °C until substantially all of the Pd and Au contents are reduced to a free metal state, after which the support is impregnated with potassium acetate to an extent of 6 to 7 weight percent of the weight of the total catalyst. For production of vinyl acetate (VA) such catalyst has a space-time yield (STY) and specific activity (SA) about 20-30 % greater than an otherwise identical catalyst composition that is formed from impregnated support reduced at 150 °C, and in a temperature range of 140 °C to 160 °C at a gas hourly space velocity of 4500/hr will at 120 psig exhibit a VA selectivity of 90 % or greater when operated under reaction conditions that result in a STY of at least 600.