

Effect of Electrical Potential on Ammonia Yield Over K-55 Catalyst

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Increasing electrical potential by about 6 volts increases ammonia yield by an insignificant increment. It is concluded that the two- to two and half fold increase in ammonia yield, which is produced on applying a strong field to the electrode-catalyst, is due to the direct effect of the strong fields on the course of the catalyzed reaction and that the electrolysis phenomena in the glass have no effect upon the reaction course.

Chemisorption of Ethylene On Yttrium Oxide

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Chemisorption of ethylene by yttrium oxide was studied, using samples which were thermally pretreated in vacuum at different temperatures. The adsorption and the electroconductivity data demonstrate that the water blocks the centers which are active for adsorption of ethylene. It is hypothesized that the chemisorbed ethylene is present in several different electrically-charged forms.

Automatic Weighing Apparatus for Study of Decomposition Kinetics of Solids in Vacuum

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Construction of the apparatus is described for automatic recording of changes in the weight of a substance. The principal parts of the apparatus are a quartz spring balance, of construction designed to magnify the image of the lower end of the weighing spiral, and a photoelectric arrangement to register the shifts in position of the lower extremity of the spiral.

A photoelectric recorder (FS-K1) is incorporated into an arm of the bridge of an electronic amplifier. Black-out of the recorder, due to an electrical imbalance in the bridge, is obviated by means of a reversing motor. A recording pen duplicates the movements of the photoelectric recorder.

The weighing range of the balance is 1 to 20 mg and accuracy of the weighings recorded is 1×10^{-6} g, when the overall weight loss does not exceed 30% of the initial weight. The accuracy of recorded weighings can be altered by adjusting the variable focusing distance of the lens.

LETTER TO THE EDITORS:

Analysis of the Preexponential Factor in the Equation for Heterogeneous Catalytic Decomposition of Nitric Oxide

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(Signed) J. B. Chertok, Vice President