results disclose the presence of chemical interaction of the components of the mixtures studied.

Kinetics of Disproportionation of Dimethyl Dioxymethyleneglycol Ether

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A study of the disproportionation kinetics of dimethyl dioxymethyleneglycol ether was made, using etherate of boron trifluoride as the catalyst. Calculations of the reaction kinetics were based on the scheme analogous to that used in determination of the kinetics of chain continuation-chain interruption processes.

Effect of Fluorination on Acidity of Aluminum Oxide

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Acidity of "pure" and fluorided aluminum oxide was determined by: titration with n-butylamine in the presence of Hammett indicators; thermometric titration with ethylacetate; high-temperature adsorption of vaporized organic bases. The results show that the samples of unpromoted and promoted aluminum oxide have closely similar properties.

Pretreatment of Al_2O_3 with boron fluoride and with hydrogen fluoride produces no noticeable increase in the acid strength of the surface sites, but it is accompanied by the formation of new relatively weak centers. These centers, apparently of a different chemical nature, catalyze cracking and isomerization reactions.

Oxygen-Initiated Heterogeneous Catalytic Condensation of Olefins in the Presence of Hydrogen: Conversion of Pentene-2

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The results of hydrogenation of pentene-2 over a precipitated Co/clay catalyst at a temperature of 100° show that the reactant hydropolymerizes to the hydrocarbons of C_8, C_9, and higher carbon number. In the absence of oxygen, the polymer yields of up to 24% are realized, based on the olefin charge; in the presence of 1.3% of added oxygen the yields of up to 30% are obtained, on the same basis. Increasing the operating temperature to 190°, decreases the product yields to as low as 5%. In the absence of hydrogen, polymerization of pentene-2 at a temperature of 100° does not occur.

Influence of the Conditions of Cooling of a Nickel-Alumina Alloy on Activity of the Skeletal Nickel Catalyst Produced

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Activity of skeletal nickel catalysts is dependent in a complex way upon the pretreatment temperature, duration of the pretreatment, and the rate of cooling of the Ni-Al alloy, the starting material. The catalyst with the greatest activity for the hydrogenation-in-solvents reactions is produced by crystallization of the alloy at nonequilibrium conditions. The nature of the active centers of the catalyst is not altered by changes in the crystallization conditions.

Effect of High Frequency Currents on Kinetics of Catalyzed Synthesis of Ammonia

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The experimental data of the effect of high frequency currents on catalytic synthesis of ammonia show that (a) High frequency currents do not alter performance of the iron catalyst used; and (b) Activity of the catalyst is significantly increased at temperatures of 300°–350°, the effect increasing with increasing frequency of the current.

Catalytic Activity of Aluminum Oxide and Acidic Properties of Its Surface

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The effect of the degree of dehydration of aluminum oxide on its activity was determined in isomerization of allylbenzene to propenylbenzene at a temperature of 300°. Acidic properties of the catalyst surface were determined concurrently by titration with butylamine containing different Hammett indicators and by adsorption of butylamine at high temperatures. In the double-bond shift reactions, properties of the acidic and catalytic centers are identical. A comparison of properties of the acidic and catalytic centers indicates