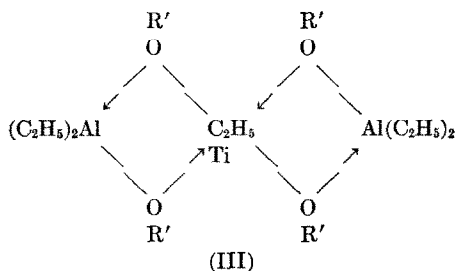


and



Complex III is catalytically active.

The hyper-fine structure of the EPR spectrum of the reaction product points to the interaction of the unpaired electron with the nuclei of two atoms of Al. The complex responsible for this EPR spectrum—and for about 10% of the titanium charged—structurally resembles Complex III, except that OR', rather than C₂H₅, stands next to Ti. As would be expected, an identical spectrum was observed in reacting Ti(OR')₃ with (C₂H₅)₂AlOR'.

Reactions of α -Oxides: Investigation of Catalysis by Acids and of the Intermediates of Ethylene Oxide-Carboxylic Acids Interactions

By N. N. L'YEB'YED'YEV AND K. A. GOOSKOV

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The mechanism of ethylene oxide interaction with carboxylic acids was investigated, using kinetic and spectroscopic analytical techniques. The infrared spectra of an ethylene oxide-acetic acid-potassium acetate system confirmed the formation of binary compounds and of a triple complex. New kinetic data were obtained for the reactions catalyzed by conjugated acids. A mechanism to explain the interaction of ethylene oxide with carboxylic acids is described.

Mechanism and Kinetics of Acid Catalyzed Conversions of 2-Methylpentene-1

By V. SH. FELDBL'YUM, S. I. KR'YUKOV, AND M. I. FARBEROV

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The kinetics of isomerization, dimerization, and hydration of 2-methylpentene-1 were investigated in presence of sulfuric acid as the catalyst. Ex-

perimentally-determined conditions are described for rapid and selective isomerization of 2-methylpentene-1 into 2-methylpentene-2. The isomerization rate constants of the forward and reverse reactions are linear functions of the acidity. This finding agrees well with the concept regarding the course of the reaction in the aqueous phase of the system, assuming: rapid distribution of the olefins between the phases, rapid formation of the π -complexes by the dissolved olefins with protons, and a slow transition of the π -complexes into alkyl cations.

Catalytic Conversion of Acetylene: Some of the Principles Governing Catalysis by Salts of Acetylene Addition Reactions in Vapor Phase

By A. J. GELBSHTEIN, M. I. SEELENG, G. G. TSHCHEGLOVA, AND I. B. VASEEL'YEVA

L. Ya. Karpov Physico-Chemical Institute

Some of the general principles were investigated which govern the character of the heterolytic vapor phase acetylene addition reactions catalyzed by the salts of Hg(II), Cd, Zn, Bi, and of other metals. The discussion presented is based on the experimental data of catalyzed addition to acetylene of molecules of water, HCl, CH₃COOH, etc.—in vapor phase. The properties of the cations of the catalytic salts are described. The salts whose cations can additively interact with acetylene are the most active catalysts. Taking into account the role of the dative interaction, a study was made of the effects upon the process of the character of the adding molecules, the anions of the salts, and the catalyst carriers.

The possibility of catalysis by protonated acidic complexes is also discussed.

Kinetics of Oxidation of Ethylene to Ethylene Oxide Over a Selenium-Promoted Silver Catalyst

By V. E. OSTROVSKY, N. V. KOOLKOVA, M. S. KHARSON, AND M. I. T'YOMKEEN

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A study was made of the kinetics of ethylene oxidation over a silver catalyst promoted by selenium (0.002 atom %) to stabilize catalytic activity. The procedure of thermally pretreating the catalyst is described. A scheme of the reaction mechanism is presented, along with the support-