solutions. The thermodynamic characterization factors for ethylene-monovalent copper π-complex formation are entirely novel.

Electron Paramagnetic Resonance of Products of Reaction of Dicyclopentadienyl of Magnesium Dichloride with Alkyl Aluminums

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A study was made of the EPR spectra of $(C_5H_5)_2VCl_2$ complexes with various alkyl- and halo-aluminums. The results show that the complexes formed with $Al(CH_3)Cl_2$, $Al(C_2H_5)Cl_2$, and also with $Al(OCH_3)Cl_2$, $AlCl_3$, $AlBr_3$, AlI_3—are of the donor-acceptor type, not involving reduction of the vanadium. By contrast, in the $(C_5H_5)_2 VCl_2$ reactions with $Al(C_2H_5)_2Cl$, $Al(C_2H_5)_3$, $Al(CH_3)_3$ and $Al(C_6H_5)_3$, the vanadium is reduced without accompanying split-off of the cyclopentadienyl rings.

Polymerization of ethylene over the complexes of $(C_2H_5)_2VCl_2$ with $Al(CH_3)Cl_2$ and $AlBr_3$, Cn* $(C_6H_5)_4$, does occur provided small amounts of oxygen are added to the reaction mixture.

Kinetics of Oxidation of Cyclohexanone and 3-Methyl Cyclohexanone by Ammonium Metavanadate in Acidic Media

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The kinetics of oxidation of cyclohexanone and of 3-methyl cyclohexanone by ammonium metavanadate dissolved in HCl were studied at a wide range of solution acidities. At the acidity function values, H_0, greater than 1.6, the rate of the reaction, is limited by the ketone enolization stage. In less-acid solutions, parallel oxidation of a ketone-like substrate is also possible. This affects the magnitude of the activation energy and the applicability limits of the kinetic equation which is adequately accurate for the reaction rate values at high acidities.

Kinetics and Mechanism of Hydrogen Iodide Addition to Multiple Carbon-Carbon Bonds of Organic Solvents: Addition of Hydrogen Iodide to Cyclohexene Dissolved in Benzene

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The rate of HI addition to cyclohexene is defined by the following trimolecular kinetic equation: $-d[HI]/dt = k_3[C_6H_{10}][HI][I_2]$. At temperatures of 4° to 47.5°, the temperature-rate constant, k_3, relationship is complex: the maximum and the minimum values of k_3 occurring at 20° and at 25+°, respectively. This relationship is explained as due to the formation and decomposition of intermediate iodine and cyclohexene complexes. Apparently, this reaction occurs via the formation of 1,2-di-iodocyclohexane, which is subsequently reduced by HI to iodocyclohexane. The results show that decomposition of 1,2-di-iodocyclohexane is faster than the addition of HI to cyclohexene in presence of iodine dissolved in benzene.

Study of Polycoordination Kinetics

By S. V. Veenogradova, M. G. Vinogradov,
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A study was made of poly-coordination of 4,4′-bis(acetoacetyl) diphenyloxide and a solution of berillium acetylacetone. This reaction is of bimolecular type. The rate constants of the forward and the reverse reactions were determined using dimethylformamide and dinyl as the solvents. The activation energies of the polycoordination—and of the reverse reaction, that of polymer destruction, were determined in dimethylformamide solutions. The results of this investigation agree closely with the collision theory of reaction rates.

Mechanism and Kinetics of Hydrolysis of γ-Butyrolactam in Potassium Hydroxide Solutions

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A study of hydrolysis of γ-butyrolactam by widely varying concentrations of KOH and KOD shows that the singly- and the doubly-ionizable forms of lactam are the reactable forms. Interaction of these two forms with water molecules is the limiting stage of the process. The ionization—and the true hydrolysis rate constants for the singly- and the doubly-ionizable forms are: $K_r = 4$; $K_{true} = 4 \times 10^{-3}$ min^{-1} *and* $K'_r = 190$; $K'_{true} = 2.62 \times 10^{-2}$ min^{-1}, respectively.

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* Apparently, a misprint. Translator.