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Catalytic Hydrogenation of Furfural

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CATALYTIC HYDROGENATION OF FURFURAL

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A study was made of the possibility of producing the reduction products of furfural by passing its vapor, with an excess of hydrogen, over finely divided catalyst.

In work which had previously been done,[1] the chief product obtained was furfuryl alcohol. With this in mind, a study was made of the identification of this compound. Several of its esters were prepared and identified. Among these was the mono-furfuryl ester of phthalic acid.

In the reduction work, the catalyst first used was freshly reduced nickel. Runs were made at various temperatures, keeping the other conditions constant. The maximum yield was obtained when the catalyst was kept at a temperature of 200°C.

Another similar set of runs was made using finely divided copper as catalyst. The maximum reduction took place at 215°C. The yield of furfuryl alcohol was larger in the case of nickel. The highest yield obtained was 5% of furfuryl alcohol.

SOME PHYSICAL PROPERTIES OF CONCENTRATED AQUEOUS SALT SOLUTIONS

J. N. PEARCE AND MILDRED A. HOOPER

The densities and refractive indices were determined at 25° for solutions of the halides of some of the alkali metals, over a concentration range from 0.1 molal to almost saturation. The partial molal volumes were calculated by differentiating the equations of the volume-molality curves. From the refractive index the specific refractivity of the solution and of the solute were calculated. The specific refractivity of the solute was found to be constant throughout the concentrations studied. Using an equation derived by Hückel, involving the refractive index, the dielectric constants of the solutions were calculated.

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1 Kaufmann and Adams, J. Am. Chem. Soc., 45, 3029-44 (1923).