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The Phosgeno-Aluminates of Lithium Magnesium Potassium and Lead. Molecular Association in Phosgen solutions

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of organometallic compounds of beryllium, calcium, strontium and barium.

IOWA STATE COLLEGE,
AMES, IOWA.

THE UTILIZATION OF COB CHAR AS A CARBURIZING AGENT

H. L. MAXWELL

(ABSTRACT)

It is shown that the char resulting from the distillation of corn cobs in the manufacture of furfural, may be substituted for the more expensive bone char now being used in the carburizing process. The distribution of the tri-ferro carbide, Fe_3C, in the carburized zone may be closely governed by time and temperature variations.

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THE PHOSGENO-ALUMINATES OF LITHIUM, MAGNESIUM, POTASSIUM, AND LEAD. MOLECULAR ASSOCIATION IN PHOSGENE SOLUTIONS

D. M. BIROSEL

(ABSTRACT)

The work of Germann and his students has definitely established that Phosgene is a Mother Solvent for a system of acids, bases, and salts. The acids are capable of reacting with metals and bases of this system to form salts. By neutralizing phosgenoaluminic acid with the anhydrous halides of Lithium, Magnesium, Potassium and Lead, their respective salts are obtained. The Potassium and Lead salts are difficult to work with because they form crusts at the end of the Faraday tubes. Lithium and Magnesium form $LiAlCl_4$ and $Mg_2Al_5Cl_{19}$ respectively. By a study of the pressure-concentration curves, these salts have been shown to be associated. Fourteen molecules of the sodium salt, twelve

of strontium and about seventy of barium are associated to give single molecules. That of barium is of colloidal magnitude.

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NEW DERIVATIVES OF VANILLIN

G. CARROLL HILMAN AND O. H. ALDERKS

(ABSTRACT)

Monobromovanillin was prepared by Carles (Bull. Soc. Chim., 17, 12 (1872) and further investigated by Tiemann and Haarman (Ber., 7, 615 (1874). More recently, Brady and Dunn (J. Chem. Soc., 107, 1859 (1915) studied the corresponding oxime, which was found to exist in but one of the stereoisomeric forms required by the theory. In the present work a dibromo derivative of vanillin, which has not hitherto been reported, has been prepared by a method that gives a high yield. Among its derivatives it has been found that the oxime exists in but one form, and that the nitril obtained from it resists hydrolysis to an extraordinary degree. The determination of the structure of the dibromo compound is in progress.

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ACTION OF POTASSIUM CARBONATE ON CERTAIN PHENYL ALKYL ETHERS

L. CHAS. RAIFORD AND D. M. BIROSEL

(ABSTRACT)

When a ligroin solution of phenyl isopropyl, isobutyl or isoamyl ether was shaken with dry potassium carbonate, we obtained crystalline products that were readily soluble in water to give alkaline liquids. When dilute acid was used, the corresponding ether was set free. The analyses of these products indicated that one atomic weight of potassium is combined with two molecular proportions of ether. So far, no such combinations have been obtained with the carbonates of lithium and sodium. Tests will be made with rubidium and caesium carbonates later.

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