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Trialkylgold Compounds

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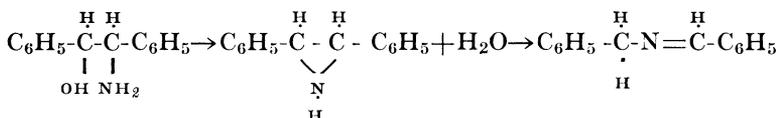
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THE REARRANGEMENT OF AMINOETHANOLS

GEORGE H. COLEMAN AND C. S. NICHOLOPOULOS

Erlenmeyer, in 1899, found that 1, 2-diphenyl-2-aminoethanol under pyrolytic conditions and subsequent acid hydrolysis yielded benzaldehyde and benzylamine hydrochloride and proposed the following mechanism:



This work was repeated using standard conditions of ninety minutes and minimum experimental temperature for maximum rearrangement. This was found to be 170° for 1, 2-diphenyl-2-aminoethanol, and 180° for the isomeric iso-1, 2-diphenyl-2-aminoethanol, and 165° for diphenylethyleneimine. Benzalbenzylamine was formed in each case. These results indicate that the ethyleneimine was unstable under the conditions required for rearrangement of the aminoethanols.

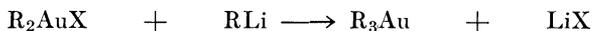
The work was continued using the isomeric chloro substituted aminoethanols, $\text{ClC}_6\text{H}_4\text{CHOHCHNH}_2\text{C}_6\text{H}_5$ and $\text{C}_6\text{H}_5\text{CHOHC-HNH}_2\text{C}_6\text{H}_4\text{Cl}$. On pyrolysis at 170° for ninety minutes it was found that each compound formed a mixture of two Schiff's bases. These mixtures differed markedly in percentage composition.

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TRIALKYLGOLD COMPOUNDS

LAUREN A. WOODS AND HENRY GILMAN

Evidence has been found for the existence of trialkylgold compounds. They may be prepared by the action of the alkyllithium derivatives on the corresponding dialkylgold halides.



At temperatures of about a -65° these compounds are stable and may be allowed to stand for hours without decomposition.

Trimethylgold may be stabilized by such chelating agents as ethylenediamine, α -aminopyridine, and benzylamine. These complexes may be handled with moderate care at room temperature and may be analyzed. Being light and heat sensitive they will de-

compose over a period of weeks or less even when under refrigeration and protected from light.

Trialkylgold compounds at a temperature of about a -65° may be cleaved with hydrogen chloride in anhydrous ether to give the corresponding hydrocarbons and dialkylgold halides. This fact has been utilized in an improved preparation of dialkylgold halides from gold tribromide and the desired alkyllithium compounds.

AMES, IOWA

PREPARATION AND STABILITY OF DIPHENYL AMINE HYDRONITRATE

ROBERT E. JONES AND J. B. CULBERTSON

In connection with certain proposed studies the question of the preparation of diphenyl amine hydronitrate, or diphenyl ammonium nitrate, arose. A search of the literature revealed no record of this substance. The nearest equivalent reported was the perchlorate salt of diphenyl amine (Ber. 43, 1085-86. 1910). This compound was obtained upon treatment of a carbon tetrachloride solution of the amine with 70% perchloric acid added dropwise.

Aside from the fact that salts of diphenyl amine are very largely hydrolyzed in any aqueous media, at the outset it was recognized that the formation of a nitrate salt would be further complicated not only because of the strongly oxidizing character of the nitrate radical but also because of the nitrating property of concentrated nitric acid.

After a number of preliminary experiments involving various dilutions, a concentration of 0.25 M. pure (practically 100%) nitric acid in carbon tetrachloride was added dropwise to a 0.5 M. solution of diphenyl amine in the same solvent. The temperature was kept at -15° C. while the solution was thoroughly mixed by mechanical stirring. The nitrate salt separated at once as a yellowish-colored amorphous solid. The product was quickly filtered with suction and washed thoroughly with cold carbon tetrachloride. This material had a light yellow color, no doubt due to traces of impurity. It was subjected to analysis for nitrogen according to the usually modified Kjeldahl procedure applied to organic compounds containing oxidized nitrogen. Duplicate results gave 11.73% and 11.89% nitrogen. The theory for diphenyl amine hydronitrate is 12.07% nitrogen.