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## Conductance in Liquid Hydrogen Sulfide Solutions

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BROMINATION OF METHYL-4-ACETYLAMINO-  
PHENYL KETONE

L. CHAS. RAIFORD AND H. L. DAVIS

*(ABSTRACT)*

Bromination of a water or acetic acid solution of methyl-2-acetylaminophenyl ketone gives a nuclear substitution product; with dry material or in the presence of concentrated sulfuric acid, halogen enters the side chain, Baeyer and Bloem [Ber., 17, 963 (1884)]. With methyl-4-acetylaminophenyl ketone it has been found in this laboratory that the highest yield of nuclear bromide is obtained by allowing 1.84 molecular proportions of bromine, dissolved in 19.8 volumes of glacial acetic acid to drop during a period of twenty minutes into a solution containing one molecular proportion of the ketone dissolved in 20 times its weight of 50% acetic acid, while the mixture is shaken and the temperature kept at 20-21°, and the whole allowed to stand for 3¾ hours. When water is not present, substitution usually takes place in the side chain. This work has been done in order to identify products obtained in the study of the condensation reactions of methyl-4-aminophenyl ketone.

STATE UNIVERSITY OF IOWA.

CONDUCTANCE IN LIQUID HYDROGEN SULFIDE  
SOLUTIONS

G. N. QUAM AND J. A. WILKINSON

*(ABSTRACT)*

Hydrogen sulfide has been found to act more like an organic solvent than as an inorganic one in the character of the substances that are soluble in it. As a result, most of its solutions are non-conductors, but it has been found that the halides of the phosphorous family do conduct, with the exception of bismuth which forms an insoluble compound with the hydrogen sulfide. With the other elements of the family the amount of conductance increases with the atomic weight of the element, the antimony chloride being of the order of 10,000 times that of the phosphorus.

Acetic acid conducts very little, but, if the OH is replaced by SH, Cl or NH<sub>2</sub>, the conductance increases very much. Replacing the H of the radical by Cl or NH<sub>2</sub> reduces the conductance to zero.

Ammonium chloride is a non-conductor (it is but very slightly soluble) but if the H of the ammonium is replaced by a methyl or ethyl radical the conductance increases very much.

In general, the results follow the rule that the conductance is increased by making the two radicals more different in positivity and negativity.

EQUIVALENT CONDUCTANCE OF SOLUTIONS IN LIQUID HYDROGEN SULFIDE

Compound	Mol conc.	Conductance
NH <sub>4</sub> Cl	Any	Nil
NH <sub>3</sub> CH <sub>3</sub> Cl	.0133	21.25 × 10 <sup>-3</sup>
NH <sub>2</sub> (CH <sub>3</sub> ) <sub>2</sub> Cl	.0113	641. × 10 <sup>-3</sup>
NH(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> Cl	.0104	1532. × 10 <sup>-3</sup>
CH <sub>3</sub> COOH	.01	541. × 10 <sup>-3</sup>
CH <sub>3</sub> COSH	.01	2.05 × 10 <sup>-3</sup>
CH <sub>3</sub> COCl	.01	2.964 × 10 <sup>-3</sup>
CH <sub>3</sub> CONH <sub>2</sub>	.01	16.8 × 10 <sup>-3</sup>
CCl <sub>3</sub> COOH	.01	Nil
CH <sub>2</sub> NH <sub>2</sub> COOH	.01	Nil

VANADIUM OXYTRICHLORIDE AS A SOLVENT

F. E. BROWN AND J. E. SNYDER

(*ABSTRACT*)

Vanadium oxytrichloride is a liquid from below -15° to about 125°. This is an excellent range for a solvent. The liquid is light yellow in color and has a density of about 1.8. It is easily hydrolyzed. The solubilities of about 80 substances have been determined. No inorganic compound is more than very sparingly soluble in vanadium oxytrichloride. Elements of the chlorine and sulfur families are soluble. Most organic compounds are readily soluble.

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THE EFFECT OF TEMPERATURE AND SOLVENT ON  
NITROGEN TRICHLORIDE ADDITIONS; ACETYLENE  
HYDROCARBONS AND NITROGEN  
TRICHLORIDE

G. H. COLEMAN, C. N. OWEN, AND J. A. RODRIGUEZ

(*ABSTRACT*)

The yield of the addition product of NCl<sub>3</sub> and 2-butene increases with a decrease in the temperature at which the reaction is carried