

mole fraction of the point of tangency. This is indicated in the above diagrams.

An accuracy greater than the practicable limit of the previous method may be obtained by the following continuation, if the accuracy of the original data is sufficient to warrant it. Let $y = f(N)$ be an analytical curve which fits that of $\Delta = f(N)$ fairly closely. Treating the deviation $\Delta' = \Delta - y$, in the same way as before, we obtain the equation

$$\bar{G}_1 = G_1 + (y + N_2 dy/dN_1) + (\Delta' + N_2 d\Delta'/dN_1) \quad (10)$$

Equation 10 gives the partial molal value as the sum of the directly measured molal value, a readily computed term, and a quantity which as before can be obtained graphically.

CONTRIBUTION FROM THE CHEMICAL
LABORATORY OF THE UNIVERSITY OF CALIFORNIA,
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RECEIVED MAY 25, 1927
PUBLISHED SEPTEMBER 2, 1927

The Saponification of Ethyl Acetate.—It was found that F. Thomas¹ had reported that the velocity of saponification of ethyl acetate by barium hydroxide in aqueous solution is influenced by light. Although the data reported seemed too inaccurate for acceptance, it was desired to ascertain if such variation of intensity of light as may be expected in a laboratory illuminated by diffuse daylight has any effect on the rate of hydrolysis of ethyl acetate in aqueous sodium hydroxide solution. Accordingly, measurements were carried out by me as follows. The technique and apparatus described in a previous paper² were used except that in the first experiment and in each alternate experiment thereafter, the container of the reaction mixture was wrapped in tin foil and the operations of mixing the reagents and of removing the samples of the mixture for analysis were carried out with a dim ruby lamp as the only source of illumination. The respective concentrations of ester and sodium hydroxide were 0.008 and 0.01. The average coefficient found for the reaction in darkness (ten experiments) was 6.77 at 25.00°. The average (eight experiments) for the reaction in diffuse daylight was also 6.77 at 25.00°. It was, therefore, established that variations of intensity of diffuse daylight such as may occur under varying laboratory conditions have no effect on the rate of the reaction in question.

CONTRIBUTION FROM THE
KENT CHEMICAL LABORATORY,
UNIVERSITY OF CHICAGO,
CHICAGO, ILLINOIS
RECEIVED JULY 5, 1927
PUBLISHED SEPTEMBER 2, 1927

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¹ Thomas, *Diss.*, Freiburg i/Br., Speyer and Kraener, 1908.

² Terry and Stieglitz, *THIS JOURNAL*, 49, 2216 (1927).