

at intervals by comparison with weighed quantities of iodine sublimed with potassium iodide, or by titration against a solution of sodium arsenite; and the ratio between thiosulphate and iodine was determined before each set of analyses. The potassium chlorate was obtained from the commercial salt by recrystallizing and drying in a vacuum over sulphuric acid. The potassium iodide employed in Series A to E was weighed out for each experiment, and was free from alkali. For the other series two stock solutions were made up, 5 cc of which gave 1.1345 and 2.2650 grams AgI respectively, corresponding to 0.965 F and 1.938 F. These solutions contain free alkali, 10 cc requiring for neutralization 1.4 cc and 2.8 cc F/10 HCl respectively.

Measuring instruments.—The pipettes and burettes were calibrated for delivery, and only those which agreed within 0.1 percent among themselves were employed.

Explanation of the tables

At the head of each table is given the initial composition of the reacting mixture. The number following the letter A, multiplied by 2.0416, gives the weight in grammes of potassium chlorate per liter of the reacting mixtures; the number following B, multiplied by 16.6, gives the weight of potassium iodide; that after C, multiplied by 3.64, the weight of hydrogen chloride; that after D, multiplied by 3.545, the weight of chlorine added as hydrochloric acid and sodium chloride; and that after FeSO₄, multiplied by 15.2, the weight of ferrous sulphate—all in grammes per liter. For example, A = 1, B = 10, C = 10 signifies that the solution was F/60 (decinormal) with regard to the chlorate, and F (normal) with respect to iodide and acid at the beginning of the experiment.

Under θ is entered the time in minutes from the first measurement, and under 100.1 the number of cc F/100 thio-

¹ In a few cases an alkalimetrically equivalent quantity of sulphuric acid was used. (Tables 35 and 36).