

was accordingly made up, and after standing an hour and a half was diluted with alcohol, replaced in the thermostat (at 0° C), and analyzed after standing the time entered under "time" in Table III.

TABLE III

Volume	Time	Yield Percent
2.82 cc	0	100
5.00	11 hours	96
10.00	41 "	92
20.00	11 "	92
30.00	40 "	91
40.00	38 "	94

When the alcohol was first added, the sodium compound was stirred up with the solution by a dry rod, and the tube and contents were well shaken from time to time.

These experiments seem to show that the reaction studied in this paper is a reversible one, although it is clear that the equilibrium has not been attained in the experiments of Table III. A complete study of the reaction therefore involves measurements of the rate of condensation, the rate of alcoholysis, and the conditions of equilibrium. The present paper deals with the first of these only.

C. The Rate of Formation of Acetone Oxalic Ester

The chemicals used in these measurements, and in those of Tables I, II and III, were:

Acetone.—Kahlbaum's "aus der Bisulfitverbindung."

Ethyl Oxalate, from Eimer & Amend, neutral.

Alcohol.—Squibb's absolute.

Acetonoxylic Ester, prepared as described on p. 5. Melting-point, 18° C; boiling-point, 210° C.

Ferric Chloride, Merck's C. P.

Sodium Ethylate.—For the preliminary experiments, a stock of the ethylate solution was prepared by dissolving sodium in alcohol, and kept in an atmosphere of hydrogen