

sucrose, and the rate is practically the same both with and without the enzyme, indicating that the enzyme is inactive. Small effects of pressure on the acid hydrolysis of sucrose have been observed in previous studies, but the findings have not been uniformly consistent among all investigators, and the direction of the effect is apparently different when different acids are used (7, 26, 30). In the present case, it is possible that the pressure increase in rate, at low tempera-

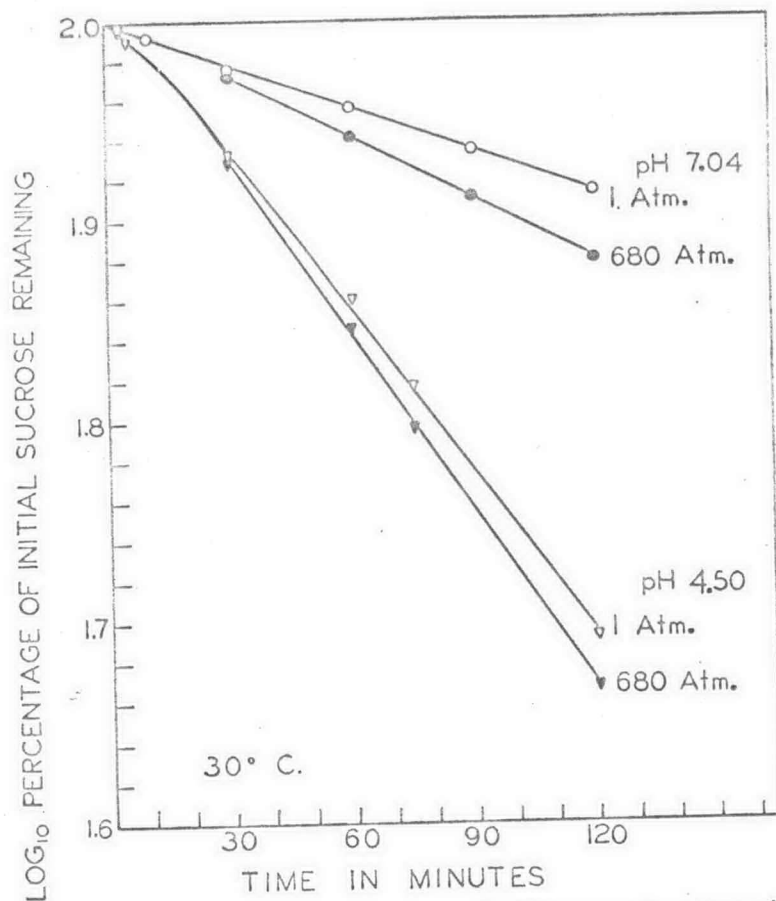


FIG. 2. Rate of hydrolysis of 10 per cent sucrose by 0.2 per cent invertase solution, at normal and increased pressure, and at pH 7.04 and 4.50, respectively.

tures or optimum pH, is due to the presence of a constant, small fraction of the enzyme inactivated, in the preparations used, through a pressure-sensitive equilibrium reaction with impurities. Sander (27) found no effect of pressure on the rate of the invertase reaction at 20°C. and pH 4.5. He found evidence of an acceleration by pressure of the velocity of mutarotation, however, indicating a volume decrease of activation of between 12.5 and 21.2 cc. per mole of glucose.

The absence of a retardation under pressure in the hydrolysis of sucrose by