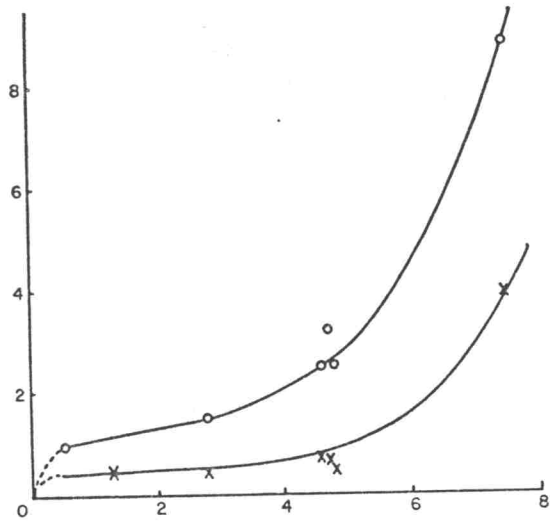

Figure 6.

the application of 90,000 psi apparently removes this induction dose and gives rise to an autocatalytic reaction proceeding to a conversion of 50% polymer. Thereafter the rate falls off in a manner similar to that of acrylamide.

The particular modification of barium methacrylate chosen (Fig. 6) is known to have a low rate of polymerization in the solid state;[3] in this case pressure is less effective over the early stages of the polymerization but does give rise to a steadily increasing propagation rate, which is considerably higher than that for the irradiation at atmospheric pressure. Furthermore the data indicate that a pressure of this magnitude also has some effect upon the initiation reaction for these acid salts.

It is valuable in this content to compare the regulating effect of pressure on the postpolymerization of these monomers from each group with a high in-source propagation rate. Table I shows the results obtained for the postpolymerization of acrylamide and crystalline calcium acrylate

TABLE I
Effect of Pressure on Postpolymerization at 19°C.

Monomer	Irradiation dose × 10^5 r	Postpolymerization time, hr.	Applied pressure, psi	% conversion
Acrylamide	6.6	16	0	44
	6.6	16	45,000	6
	6.6	16	90,000	3
Calcium acrylate (crystalline dihydrate)	3.3	3	0	4
	3.3	3	45,000	50
	3.3	3	90,000	82