

Figure 2.

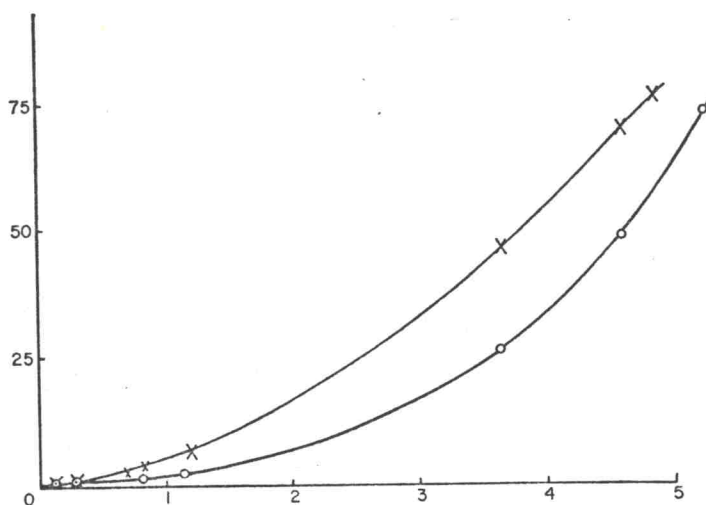


Figure 3.

yield from barium methacrylate and calcium acrylate up to 100% conversion to polymer.

The solid state polymerization of acrylamide at atmospheric pressure is characterized by a fast reaction to high conversion. Pressurization of the monomer crystals appreciably modified this reaction. Polymerization is retarded (except in the very initial stages), Figure 2 indicating a linear relationship with dose up to 2% polymer formation. Only at high conversions, when the rate increases, is it accelerated by pressure (Fig. 3).

In the case of both acrylamide and methacrylamide there is no evidence of any induction period when pressure is applied. Bamford⁸ concluded that it was necessary for some polymer to be formed before applied stress could modify the in-source reaction, so it would seem that pressures up to

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acrylamide has the effect
ne pressure increases the