

고리올리고(부틸렌테레프탈레이트)가 폴리(부틸렌테레프탈레이트)의
결정화 속도에 미치는 영향

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The isothermal and non-isothermal crystallization kinetics of poly (butylene terephthalate) (PBT) with different cyclic oligomer content was investigated at various crystallization temperatures and cooling rates. The overall rate of crystallization was measured by differential scanning calorimetry. The results were analyzed by the Avrami equation for the isothermal crystallization and by the Ziabicki's and Jeziorny's theories for the non-isothermal crystallization. At the small content of cyclic oligomer, the crystallization rate of PBT increased. However, as the content of cyclic oligomer increased, the crystallization rate decreased. (Fig.1 and Fig.2) The variation of crystallization rate of PBT due to oligomer did not affect the final crystallinity of PBT.

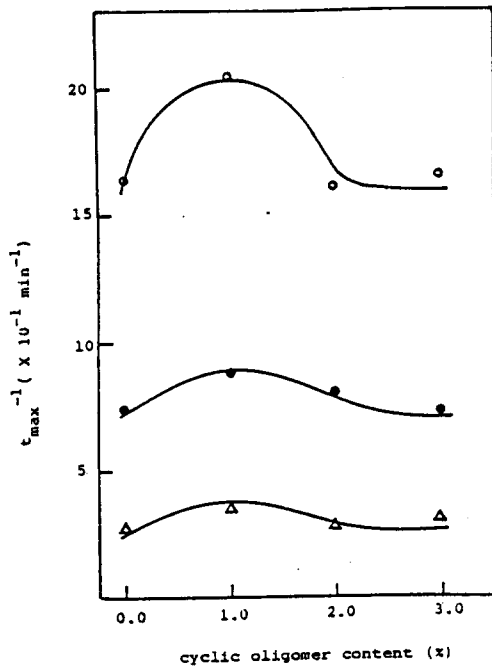


Fig.1. Reciprocal of the time required to reach maximum crystallization rate, t_{max}^{-1} as a function of cyclic oligomer content for PBT at some crystallization temperatures: (○) 195°C, (●) 200°C, (△) 205°C.

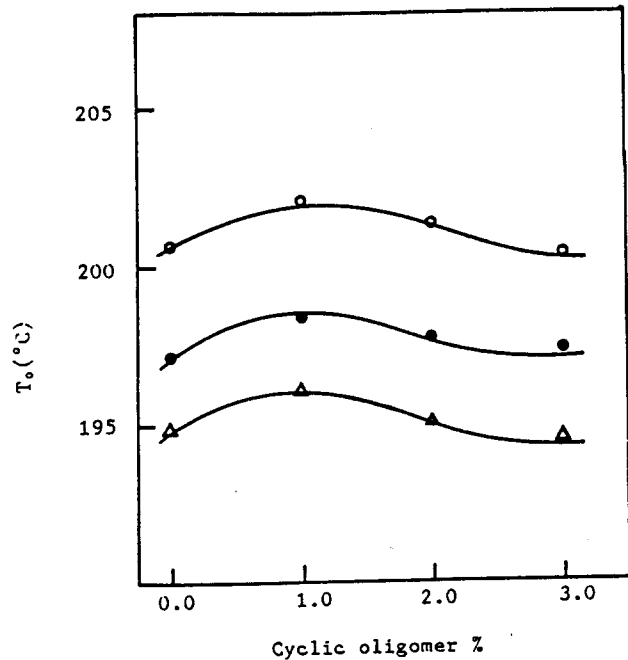


Fig.2. Crystallization onset temperature, T_o as a function of cyclic oligomer content for PBT at some cooling rates: (○) 5°C/min, (●) 10°C/min, (△) 15°C/min.