عنوان مقاله:

Effect of Dissolved CO2 on the Crystallization Behavior of PLA with Various D-contents

محل انتشار:

کنفرانس بین المللی فرآورش پلیمرها (سال: 1390)

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خلاصه مقاله:

In this study, the effect of dissolved CO2 on the crystallization kinetics of PLA with three different D-contents with and without talc has been investigated at atmospheric pressure in a regular and high-pressure differential scanning calorimeter (DSC). Non-isothermal crystallization was investigated during the cooling process while the samples were cooled at a rate of 2oC/min from 200oC to the room temperature. The results show that the crystallinity of PLA samples with and without talc can improve by increasing the CO2 pressure due to the plasticization effect of CO2. The crystallinity of PLA with low D-content can be enhanced even without talc, whereas the addition of talc and increased CO2 pressure expedites the crystallization rate even more. On the other hand, PLA samples with a high D-content show no detectable crystallization peak even with the addition of talc and at high CO2 pressures. Also, crystallinity occurs at lower temperatures as the pressure increases, due to the plasticization effect of CO2

کلمات کلیدی:

PLA, D-content, High Pressure, CO2, crystallinity