

### Crystallization Kinetics of Polypropylene with Repeated Extrusion

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Crystallization kinetics of the polypropylene (PP) block copolymer and recycled PP block copolymer was studied by DSC and optical microscopy. The recycled PP samples were prepared using a twin screw extruder. In the study of the crystallization rate, the half crystallization time of the PP samples was increased as increasing the number of the extrusion time. From the isothermal kinetics at 130oC, the crystallization rate was decreased as increasing the number of the extrusion time. Also in the results of Avrami plot, the overall crystallization rate constant (K) was decreased as increasing the number of the extrusion time. From the optical microscopy, the number of the spherulite growth site was decreased as increasing the number of the extrusion. The result of the optical microscopy was consistent with the isothermal crystallization and Avrami plots at 130oC. From the results of the crystallization rate, isothermal crystallization kinetics, Avrami plots, and optical microscopy, it was suggested that the crystallization of the PP copolymer was decreased as increasing the number of the extrusion time.