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## **Fundamental Study on Structure Development of Thin-wall Injection Molded Products**

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Thin-wall injection molding of polypropylene (PP) and cycloolefin copolymer (COC) were performed to clarify the structure and mechanical properties of micro-scale molded products. Effects of mold thickness and process conditions on processability in micro injection molding were evaluated. Furthermore, the structure and mechanical properties of molded products were analyzed using wide angle X-ray diffraction, birefringence, DSC measurements, and tensile testing. In the case of PP, the molecular orientation in the vicinity of the gate was higher than that at any other positions. Birefringence increased with decreasing mold temperature, whereas crystallinity decreased with decreasing mold temperature. The molecular orientation of COC showed a similar tendency as in the case of PP, where birefringence showed the highest value at low mold temperature and in the vicinity of the gate.