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Analysis of the Replication Properties of Lightguiding Plate Between Micro Injection Molding and Micro Injection Compression Molding

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This paper presents the application of microstructure replication of lightguiding plate for micro injection molding (MIM) and micro injection compression molding (MICM). The lightguiding plate is applied on LCD of two inch of digital camera. Its radius of micro-structure is from 100 μm to 300 μm by linearity expansion. The material of lightguiding plate is PMMA. This paper discusses the replication properties for different process parameters by single-parameter method for micro injection molding and micro injection compression molding. The important process parameters of replication properties are the mold temperature, packing pressure and melt temperature in micro injection molding. The important process parameters of replication properties are the mold temperature, compression distance and melt temperature in micro injection compression molding. The mold temperature is the most significant factor of replication properties of microstructure of lightguiding plate for micro injection molding and micro injection compression molding. The process of micro infection compression molding is better than micro injection molding for height replication.