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ABSTRACT OF THE DISCLOSURE

An on-demand fast cycle mold for producing injection molded products such as polypropylene blister package bases. The on-demand fast cycle mold has a heated and cooled hot runner system which provides a short response time and optimal temperature control. On-demand injection molding is made possible by a pulse modulated closed loop mold cooling system, the cooling design of brazed gate inserts, and an effective layout of the cooling channels. The programming of the software for a computer control system has also been designed to achieve on-demand injection molding. The design of the closed loop mold cooling system incorporates an advanced cooling circuit layout, and provides for easy maintenance and better quality control of the coolant which significantly reduces corrosion and scale buildup. Mold cooling is controlled by sensors installed inside the mold which are used in feedback control loops. The brazed gate inserts provide precise mold temperature control and improved cosmetic appearance of the molded packages. The use of a needle-valve injection nozzle results in reduced cycle time and improved moldability.

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