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EFFECT OF SLOT VALVE ADJUSTMENTS ON THE MELT FLOW RATE IN A TWIN SCREW EXTRUDER

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Twin screw extrusion is used extensively for mixing, compounding, or reacting polymeric materials. The slot valve is a device to control degree of mixing depending on the properties of feed materials and feed rate by opening and choking the area of melt low passage formed in the mixer barrel using two rotary slot bars. In this research, the effect of slot valve angle changes was investigated on the Melt Flow Rate (MFR) of granules produced from two different grades of High Density Polyethylene (HDPE) in the same process conditions. Accordingly, after adjustment the angle of the slot valve, granule samples was prepared for the polymer powder with specific profile and MFR was determined. Results indicated that the angle of the slot valve, depending on the grades, was effective on the final product MFR in the range of 0.05 to 0.2.