

ON-LINE RHEOMETER DEVICE

ABSTRACT

A system for providing process control information, such as viscosity, concerning a polymer melt comprises a means containing a polymer melt under pressure; means for diverting a stream of the polymer melt directly from said containing means to and through an orifice of predetermined geometrical shape wherein the flow of said diverted portion to and through said orifice is unobstructed and directly dependent on the pressure of said main polymer melt wherein the cross sectional area is sized to permit the flow of said diverted melt polymer therethrough absence additional independent means acting on said diverted melt polymer for increasing flow through said orifice; temperature sensing means for measuring the temperature of the diverted melt stream and producing a resultant temperature signal; pressure sensing means for measuring the pressure of the diverted melt stream and producing a resultant pressure signal, said pressure signal being directly dependent on the pressure of polymer in said main polymer melt and the predetermined size of said orifice; means weighing at least a portion of said diverted melt stream discharged through said orifice, said weighing means including weight sensing means for measuring the weight of diverted melt stream and producing a resultant weight signal; and computer means responsive to the temperature, pressure and weight signals for determining process characteristics of the main polymer melt.

Figure 1