



RHEOLOGICAL STUDY OF MIM WATER SOLUBLE BINDER SYSTEM

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ABSTRACT

Although many methods are used for characterization of Metal Injection Moulding (MIM) parts, but the process of metal injection molding (MIM) has provided an alternative for the manufacture to produce small and complex parts. MIM is an acronym for metal injection molding, a process for manufacturing metal parts. MIM combines the design freedom of plastic injection molding with the performance of metal. This research will provide an introduction to metal injection molding by briefly reviewing the basic process steps by using a composite binder system whose main constituents are polyethylene glycol (PEG), which are water soluble binder system. This also covered Hostamont EK 583, a ready made binder and finely dispersed polymethyl methacrylate (PMMA). Besides, feedstock at three different PEG % weight binder composition; 65%, 75% and 85% powder loading were studied in order to find the best homogeneity of feedstock. From the results, it shows that the increasing of the PEG % composition would increase the viscosity. The lower the value of viscosity is, the easier it is for a MIM feedstock to flow. Result also shows that the flow of the feedstock is found as pseudoplastic flow and at the composition of PEG 75% posses the best homogeneity feedstock.

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