ABSTRACT:

The influence of a binder system to the rheological behavior of a metal injection molding (MIM) feedstock is presented in the paper. The binder systems used are: a) PEG & PMMA b) Palm stearin & LLDPE and, c) Tapioca starch & LLDPE. The viscosity and shear rate of the feedstocks were measured at various range of temperature and shear rate across the L/D = 10 capillary rheometer. The flow behavior index, n and activation energy, E of each feedstock were measured to show its significance as MIM feedstock. Generally, the result indicates all feedstock exhibits a shear thinning behavior and the binders are suitable as MIM binder. Additionally, the present paper has discovered that the binder system does not have much influence to the activation energy. In order to show the relevance of the rheological bahavior to the actual injection molding performance, green parts has been injection molded and the results shows an agreement with the rheological behavior result.