

Abstract Submitted  
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**Aggregation and shear flow in a latex**<sup>1</sup> SURESH AHUJA, Xerox Corporation — A latex when subjected to shear can exhibit Newtonian or a non-Newtonian flow and a yield stress depending on inter-particle forces. Under dynamic deformation, elastic modulus shows a plateau as the shearing frequency is decreased. Acrylic latex was made under varying processing conditions, which resulted in differences in yield stress, elastic modulus and non-Newtonian behavior. The elastic modulus showed linear fit to yield stress and exponential fit to particle size of latex. The results are compared with non-linear elastic model that predict power law and exponential fits. The model uses microscopic statistical mechanical theory, which describes glassy dynamics based on a non-equilibrium free energy that incorporates local cage correlations and activated barrier- hopping processes.

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