



P-18-831

SQUEEZE FLOW OF A VISCOELASTIC LESLIE-ERICKSEN

Alejandro D. Rey, Edtson Emilio Herrera Valencia,

Chemical Engineering, McGill

**Corresponding author : emilio_ed@hotmail.com*

The viscoelastic behavior of a crystal liquid in a squeeze flow is analyzed using the Leslie-Ericksen constitutive equation. This flow is usually simulated allowing a continuous flow of liquid into the narrow gap between two circular plates through the lower plate. A perturbation scheme by the shear stress, pressure, axial and radial velocity in terms of a small parameter is suggested. To zero order, it is found that the normal force on the upper disc is directly related to shear dependent viscosity. To first order, the effects due to elasticity are significant. In addition, we found asymptotic expressions by the force to zero and first order to particular cases. Finally, theoretical results are predicted using rheometric data by Grecov and Rey. 2003 [3]