

Abstract Submitted
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The thinning of viscous liquid threads.¹ J. RAFAEL CASTREJON-PITA, ALFONSO A. CASTREJON-PITA, IAN M. HUTCHINGS, University of Cambridge — The thinning neck of dripping droplets is studied experimentally for viscous Newtonian fluids. High speed imaging is used to measure the minimum neck diameter in terms of the time τ to breakup. Mixtures of water and glycerol with viscosities ranging from 20 to 363 mPa s are used to model the Newtonian behavior. The results show the transition from potential to inertial-viscous regimes occurs at the predicted values of $\sim Oh^2$. Before this transition the neck contraction rate follows the inviscid scaling law $\sim \tau^{2/3}$. After the transition, the neck thinning tends towards the linear viscous scaling law $\sim \tau$.

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