Role of Gas Composition in Viscous Drop Splashing

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— Splashing occurs when a liquid drop impacts on a smooth, dry surface at high velocity. It has been discovered that the pressure of the surrounding air is important in causing a splash.\(^1\) Moreover, viscous splashing occurs at a much later time than the splashing of an inviscid liquid.\(^2\) Here we investigate the relationship between the threshold pressure, \(P_T\), and the impact velocity, \(V_0\), for viscous splashes. \(P_T\) demonstrates only a weak dependence on impact velocity above 2.0 m/s. Also, the composition of the gas in which splashing occurs is varied to gain insight on the role of gas molecular weight on \(P_T\) in the viscous regime.