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Gruneisen Parameter of Teflon from Hugoniots Measured at Different Initial States¹ JERRY FORBES, NSWC-Indian Head, PAUL URTIEW, CRAIG TARVER, KEVIN VANDERSALL, Lawrence Livermore National Laboratory — Abstract. The Gruneisen parameter for Teflon is calculated using measured Hugoniot states obtained by shocking Teflon initially at atmosphere pressure and an initial temperature of 200°C. The Gruneisen equation of state is used with the reference state taken as the Teflon Hugoniot measured at atmospheric pressure and an initial temperature of 25°C. An error analysis for Gruneisen parameter γ yields large errors even for carefully done gas gun experiments using manganin gauges. Extremely accurate measurements of pressure, shock velocity, and particle velocity are required to reduce the error in g to approximately \pm 10 %.

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