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Equation of State of an Aluminum Teflon Mixture

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ABSTRACT

A test program has been conducted at Sandia National Laboratories for the development of a competent model for polymeric mixtures to promote an understanding of reactions that may undergo under high pressures and high temperature conditions that exist under dynamic loading conditions. An aluminum teflon composite was chosen for this study. A series of plate impact experiments were conducted utilizing propellant and light gas guns to provide basic material properties needed for the computational analysis including Hugoniot data at shock pressures up to 60 GPa. Velocity interferometry was used to obtain material velocity wave profiles for determination of shock Hugoniot data. This data will be useful to evaluate various mixture material models that evaluate reaction kinetics for such systems

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