

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

A Mie-Gruneisen Equation of State for ICF Applications¹ SHANE WALTON, DON LEMONS, ROBERT PETERSON, Los Alamos National Laboratory — We develop and test a relatively simple Mie-Gruneisen equation of state (EOS) that incorporates a condensed matter – vapor change of phase for possible application in inertial confinement fusion (ICF) calculations. The pressure and energy equations are polynomial functions of temperature and volume that self-consistently model molecular repulsion and attraction. These EOS are uniquely characterized by only four parameters (e.g., critical point, and coherence energy); additional data provides self-consistency tests. Characterizing parameters and self-consistency tests are collected for a variety of materials with special attention to the metal Beryllium and the molten salt Flibe (LiF-BeF₂).

¹Work supported by US DOE (Contract #DE-AC52-06NA25396)

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Date submitted: 21 Jul 2006

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