Abstract Submitted
for the SHOCK11 Meeting of
The American Physical Society

A Review of Reshock Data for PMMA above the Phase Transition and the Implied Gruneisen Coefficient CHRISTOPHER NEEL, LALIT CHHABILDAS, Air Force Research Laboratory, WILLIAM REINHART, Sandia National Laboratory — PMMA (poly methyl methacrylate) is an important material to characterize, both as a model glassy polymer and as a window for interferometry techniques. Recently, PMMA reshock experimental results have been reported which implied a large thermal pressure component for PMMA reshocked from about 45 GPa. This work calls into question the high pressure, primary Hugoniot data the original conclusions were based on and presents an alternative explanation, namely, that the average Gruneisen coefficient, as indicated by the Mie-Gruneisen EOS, is too small to be inferred by the experimental data.

Christopher Neel
Air Force Research Laboratory

Date submitted: 17 Feb 2011 Electronic form version 1.4