Abstract Submitted
for the SHOCK07 Meeting of
The American Physical Society

Dynamic Response of Kovar to Shock and Ramp-Wave Compression.[1] J.L. WISE, S.C. JONES, C.A. HALL, J.R. ASAY, D.M. SANCHEZ, Sandia National Laboratories — Complementary *gas-gun* and *electromagnetic pulse* tests conducted in Sandia's Dynamic Integrated Compression Experimental (DICE) Facility have, respectively, probed the behavior of electronic-grade Kovar samples under controlled *impact* and *intermediate-strain-rate ICE* (Isentropic Compression Experiment) loading. In all tests, velocity interferometer (VISAR) diagnostics provided time-resolved measurements of sample response for conditions involving one-dimensional (*i.e.*, uniaxial strain) compression and release. Wave-profile data from the gas-gun impact experiments have been analyzed to assess the Hugoniot Elastic Limit (HEL), Hugoniot equation of state, spall strength, and high-pressure yield strength of shocked Kovar. The ICE wave-profile data have been interpreted to determine the locus of isentropic stress-strain states generated in Kovar for deformation rates substantially lower than those associated with a shock process. The impact and ICE results have been compared to examine the influence of loading rate on high-pressure strength.

[1]Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under Contract DE - AC04 - 94AL85000.

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Date submitted: 21 Feb 2007 Electronic form version 1.4