

Abstract Submitted  
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**Measurement of the Principal Quasi-Isentrope of Lead to  $\sim 3$  Mbar using the “Z” Machine** STEPHEN ROTHMAN, AWE Aldermaston, JEAN-PAUL DAVIS, MARCUS KNUDSON, TOM AO, Sandia National Laboratories, STEPHEN GOODING, AWE Aldermaston — We have measured the principal quasi-isentrope of pure lead to  $\sim 3$  Mbar, using magnetically-driven ramp compression on SNL’s “Z” machine. Multiple point-VISARs were used to measure the surface velocities of the compressed samples, and iterative Lagrangian analysis was used to find the wave speed as a function of ramp velocity to an accuracy of  $< 2\%$ . This was then integrated to longitudinal stress as a function of volume on the quasi-isentrope. The experiment used a stripline configuration with samples arranged in pairs at each of 4 vertical positions on opposite drive panels: three of the four pair positions held two lead samples of different thicknesses, while the fourth consisted of one lead sample and a bare panel for drive measurement. The thicker samples of the 3 pairs experienced weak shocks at low stress so their quasi-isentrope data is unreliable there. The single-sample data was good at low stress but affected at high stress by either effects of closure of the stripline gap and / or reflections of the compression pulse from the drive-panel rear surfaces. Data from both methods overlapped at intermediate stresses so have been combined to give the required quasi-isentrope data.

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