

Abstract Submitted
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Low Pressure Hugoniot for U-Nb (6 wt.%)¹ D.D. KOLLER, P.A. RIGG, R.S. HIXSON, G.T. GRAY III, B.J. JENSEN, J.D. MAESTAS, Los Alamos National Laboratory — Over the last several years, many experiments have been conducted to study the dynamic response of U-Nb (6 wt.%) alloy. An understanding of the physical mechanisms governing the behavior of this material is necessary to develop robust physical models for today's hydrocodes. Previous experiments indicate that the dynamic response of this alloy is strongly dependent on the initial microstructure of the material. Using a well characterized material, a series of low pressure shock experiments were conducted at the single stage light gas gun facility at Los Alamos National Laboratory. Time resolved particle velocity measurements were made using VISAR. Absolute VISAR system timing was measured and cross correlated to shock breakout time to allow hugoniot points to be calculated. These shots provide both low pressure Hugoniot points for U-Nb (6 wt.%) alloy and a better constraint on the dynamic material response behavior under low pressure shock loading.

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