

Abstract Submitted
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Ramp-wave Experiments to Measure Dispersiveness in Explosives JAMES KENNEDY, Hazards & Explosives Research & Education, LLC, BLAINE ASAY, KIEN-YIN LEE, DAVID OSCHWALD, KEITH THOMAS, BRYAN HENSON, LAURA SMILOWITZ, Los Alamos National Laboratory — Composite explosives such as PBX-9404¹ and PBX-9501² are known to disperse shock waves into ramp waves at stresses of 1.2 GPa or less. Thus a shock wave cannot propagate in those explosives at such low stresses. Ramp-wave experiments have been performed on PBX-9501 to determine the minimum stress level at which shocking up occurs. Gas-gun experiments involved impact of a projectile onto a fused-silica plate, which developed a ramp wave that was transmitted through the explosive sample. The shape of the wave exiting from the sample was measured with VISAR. The compression level at which the ramp steepens into a shock indicates the limit of the dispersive behavior. This is of interest particularly because the ramping-out behavior may reduce the vigor of response of an explosive to hazard circumstances that ignite deflagration, and thus forestall DDT.

¹J. W. Nunziato, E. K. Walsh and J. E. Kennedy, *Intl. J. Eng. Sci.* **16**, 637, 1978.

²J. J. Dick, A. R. Martinez and R. S. Hixson, *Eleventh Intl. Detonation Symp.*, p. 317, ONR 33300-5, 1998.

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