

Abstract Submitted  
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**Hugoniot of Meso-Erythritol as an Inert Surrogate for PETN** ZAKARY WILDE, Los Alamos National Laboratory Arizona State University, PEDRO PERALTA, Arizona State University — Inert surrogates for high explosives provide low-risk options to understand basic material response to extreme conditions such as high pressure and high strain rates. Meso-Erythritol is under evaluation as a shock surrogate for Pentaerythritol Tetranitrate (PETN) due to their similar crystal structures and melting points. However, no Hugoniot data for Meso-Erythritol currently exists. Gas gun experiments will be performed to determine the Hugoniot of Meso-Erythritol as both power compacts and monolithic single crystals. Timing pins and VISAR will be used to measure the shock and particle velocities. Experiments will investigate particle velocities of up to 600 meters per second. The results will be compared to the Hugoniot of PETN to evaluate similarities in shock behavior.

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