Abstract Submitted for the SHOCK07 Meeting of The American Physical Society

Shock Initiation Experiments on the HMX Based Explosives LX-07 and LX-10 with Associated Ignition and Growth Modeling KEVIN S. VANDERSALL, CRAIG M. TARVER, FRANK GARCIA, PAUL A. URTIEW, STEVEN K. CHIDESTER, Lawrence Livermore National Laboratory — Shock initiation experiments on the HMX based explosives LX-10 (95% HMX, 5% Viton by weight) and LX-07 (90% HMX, 10% Viton by weight) were performed to obtain in-situ pressure gauge data, run-distance-to-detonation thresholds, and Ignition and Growth modeling parameters. A 101 mm diameter propellant driven gas gun was utilized to initiate the explosive samples with manganin piezoresistive pressure gauge packages placed between sample slices. The run-distance-to-detonation points on the Pop-plot for these experiments and prior experiments on another HMX based explosive LX-04 (85% HMX, 15% Viton by weight) will be shown, discussed, and compared as a function of the binder content. This parameter set will provide additional information to ensure accurate code predictions for safety scenarios involving HMX explosives with different percent binder content additions. This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48.

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