

Abstract Submitted
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Shock Initiation Experiments on PBX9501 Explosive at 150°C for Ignition and Growth Modeling KEVIN S. VANDERSALL, CRAIG M. TARVER, FRANK GARCIA, PAUL A. URTIEW, Energetic Materials Center, Lawrence Livermore National Laboratory, Livermore, CA 94550 — Shock initiation experiments on the explosive PBX9501 (95% HMX, 2.5% estane, and 2.5% nitroplasticizer by weight) were performed at 150 ° C to obtain in-situ pressure gauge data and Ignition and Growth modeling parameters. A 100 mm diameter propellant driven gas gun was utilized to initiate the PBX9501 explosive with manganin piezoresistive pressure gauge packages placed between sample slices. The run-distance-to-detonation points on the Pop-plot for these experiments showed agreement with previously published data and Ignition and Growth modeling parameters were obtained with a good fit to the experimental data. This parameter set will allow accurate code predictions to be calculated for safety scenarios involving PBX9501 explosives at temperatures close to 150 ° C. 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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