Abstract Submitted
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Short Shock Pulse Duration Experiments Plus Ignition and Growth Modeling on Composition B CHADD MAY, CRAIG TARVER, Lawrence Livermore National Laboratory — Short pulse duration shock initiation experiments were performed on 1.71 g/cm3 Composition B using electrically driven kapton flyer plates. Critical impact velocities for initiation at several flyer plate thicknesses and diameters were determined. For 2 mm diameter flyers, the critical velocities for shock initiation ranged from 4.06 to 4.72 km/s for flyer thicknesses ranging from 127 to 50.8 microns. Since the failure diameter of Composition B is approximately 4 mm, the kapton flyers imparted sufficient energy to overcome the effects of both rear and size rarefaction wave energy loses and cause detonation. The Ignition and Growth reactive flow model parameters for Composition B were modified to include unreacted Hugoniot, detonation reaction zone, and overdriven detonation experimental data and then applied to the kapton flyer data with good results. This work was performed under the auspices of the U. S. Department of Energy by the Lawrence Livermore National Laboratory under Contract No. DE-AC52-07NA27344.: Explosive, Composition B, shock to detonation transition, Ignition and Growth: 82.33.Vx, 82.40.Fp

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