

Abstract Submitted  
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**The Transverse Radial Diverging Initiation Behavior of PBX 9502** TERRY SALYER, TARIQ ASLAM, Los Alamos National Laboratory — A series of experiments examining the transverse radial initiation behavior of PBX 9502 has been fielded in a geometric configuration of PBX 9502 acceptor annulus and PBX 9501 donor core. The experiments were specifically designed to examine diverging initiation from the core. For sufficient diameter, the cylindrical donor core initiates the acceptor annulus with behavior akin to typical corner turning with the expected dead zone features. Even though PBX 9501 is significantly more energetic than PBX 9502, the critical initiation diameter is greater than the critical failure diameter of PBX 9502. The behavior of this initiation threshold is studied along with the dynamics of the shock initiating layer between the two dissimilar explosives. Streak camera imaging is used to examine the wave dynamics at the periphery of the PBX 9502 acceptor annulus, and to take measurements of the initiating layer at the material interface for comparison to the analogous behavior in the layered slab geometry. Additionally, proton radiographic imaging is used to examine the complex internal initiation dynamics, and high fidelity reactive flow modeling is used to accurately predict the transverse radial initiation behavior in the geometry of the test.

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