

Abstract Submitted  
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**A Volumetric Approach to Shock Initiation of Triaminotrinitrobenzene (TATB)** MIKE BOWDEN, Los Alamos National Laboratory — A volumetric shock initiation criterion, based on the concept of a critical shock volume as a function of shock pressure, has been shown to describe historic data on shock initiation of PBX9404 by thick, planar flyers, rods, and round-nosed projectiles, along with recent data on shock initiation of hexanitrostilbene (HNS) and pentaerythritol tetranitrate (PETN) by thin, curved flyers, which criterion based upon a shock duration cannot describe as completely. This criterion has been applied to historic data on shock initiation by flyer plates of triaminotrinitrobenzene (TATB), specifically PBX 9502, LX-17 and ultrafine TATB. The volumetric shock initiation criterion is shown to fit the data well, and highlights differences in sensitivity between the three materials. A comparison is made between the volumetric shock sensitivity of sensitive materials, such as PETN, less sensitive materials, such as HMX, and insensitive materials, such as TATB, where the required shocked volume for initiation spans almost six orders of magnitude.

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