

Abstract Submitted  
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**Damage formation during high strain rate deformation of PBS9501** CLIVE SIVIOUR, University of Oxford, WILLIAM PROUD, University of Cambridge — A key aspect of the response of an explosive formulation to high strain rate loading is damage formation. In addition to the effect on immediate strength properties, damage, once formed, can lead to an undesirable increase in sensitivity and rate of burning. Methodologies for understanding and characterising the damage formed during loading are therefore vital if we are to claim a true understanding of the mechanical properties of these materials. This paper presents results from experiments on stimulant, PBS9501, of a polymer bonded explosive. High strain rate loading was performed in a split Hopkinson pressure bar, using speckle metrology and high speed photography to build up a more complete dataset on the formation of damage in this material. X-ray microtomography was also applied to examine internal damage in recovered specimens.

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