

Abstract Submitted  
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**Equation of State of Triaminotrinitrobenzene (TATB) up to 75 GPa** RAJA CHELLAPPA, DANA DATTELBAUM, Los Alamos National Laboratory — The energetic properties of triaminotrinitrobenzene (TATB) combined with its insensitivity makes it an attractive candidate for advanced munition applications. Understanding the effect of pressure (P) and temperature (T) on structure-property relationship of TATB and measurement of thermodynamic quantities (bulk modulus and its derivative, Grüneisen coefficient, and others) is essential for high level predictive modeling. The P-V isotherm for TATB is currently available only up to 13 GPa. In this work, synchrotron XRD measurements on TATB powder under hydrostatic conditions (Ne medium) were performed up to 75 GPa and we will present a revision of equation of state and discuss evidence for phase transformations at  $\sim 30$  GPa and  $\sim 60$  GPa based on these new measurements.

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