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Laser-driven shock-compressed Hugoniot of TATB up to 100 GPa A. FERNANDEZ PANELLA, Lawrence Livermore Natl Lab, M. C. MARSHALL, T. MYERS, S. BASTEA, L. FRIED, D. ERSKINE, T. BUNT, Lawrence Livermore Natl Lab, Livermore, CA, L. LAUDERBACK, J. H. EGGERT, L. D. LEININGER, Lawrence Livermore Natl Lab, LAWRENCE LIVERMORE NAT. LAB TEAM — The energetic material triamino-trinitrobenzene (TATB) has attracted much attention due to its remarkable properties of being a high performance explosive while being very insensitive to external stimuli, like high temperatures and impacts. The underlying reasons for the insensitivity of certain high explosives, like TATB, is not yet well understood. We present the Hugoniot of single-crystal shock-compressed TATB in a pressure range from 15 - 100 GPa. The experimental data, which was acquired at the Omega EP laser facility, has been compared to reacted and unreacted Hugoniot simulations using Cheetah, a LLNL thermochemical computer code. This data will help to better understand the kinetics and time-scale of the reaction zone in insensitive high explosives and improve equation of state models for TATB. Prepared by LLNL under Contract DE-AC52-07NA27344.

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