

Calibration of the equation of state for TATB detonation products through experiments on the throwing of copper tubes with a diameter of 20 mm

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A comparison is made of various equations of state (EOSs) for detonation products (DPs) used in calculations VNIIEF as well as of experimental data and calculated results obtained with accounting for “ideal” detonation and taking into account the kinetics of detonation of MK using the numerical LEGAK technique. A set of parameters of a new EOS for explosives based on TATB is obtained. It is shown that the proposed EOS allows describing experimental data at large degrees of expansion of DPs. In this work, the results of calibrating a new EOS for DPs for an explosive composition based on TATB are presented. For this purpose, some experimental data on radial and end throwing of 20 mm diameter copper tubes were used. Numerical modeling of experiments was performed using the LEGAC method with the use of “ideal” detonation and MK detonation kinetics. A comparison of various DP EOSs used in VNIIEF calculations was performed. On calculations made with the “ideal” detonation taken into account, all considered EOSs give a deviation from the experiments.