

Abstract Submitted  
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**Determination of sound velocities of “overcompressed” detonation in HMX-based explosive** ALEXEY KOVALEV, MIKHAIL ZHERNOKLETOV, VLADIMIR BEL'SKY, EVGENY BOGDANOV, Russian Federal Nuclear Center - VNIIEF, VNIIEF TEAM — The authors present results of determination of sound velocities in explosion products (EP) of HMX-based explosive overcompressed up to the pressures of 50-85 GPa by overtaking unloading method. The radiowave and optical methods are used to record the time when front of overcompressed detonation wave in investigated sample of high explosive (HE) is overtaken by expansion wave, which propagates from the back surface of impactor with sound velocity. The data on sound velocities, which were independently obtained by two different methods, were in agreement. The methods with use of radiointerferometer and indicator liquid are rather effective for determination of sound velocities in overcompressed EP and for investigation of parameters in the Jouget point of various HEs, which are required for calibration of their equations of state (EOS).

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