

# The influence of physical, chemical and technological characteristics of high explosives on their shock wave sensitivity

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The given work presents results of investigations of the shock wave sensitivity of high explosives (HE) in gap-test set-up. They performed assessment of the influence of their physical, chemical and technological characteristics on the level of shock wave HE sensitivity. The experiments were performed on the cylindrical samples of plastic and thermoplastic HE based on octogene, TATB, hexogene and finely-dispersed ten. They used the values of time delay and the depth of detonation origin, that at the same time characterize detonation HE capability, as the criterion of assessing shock wave sensitivity for this method. Determination of the time delay and the depth of detonation origin was performed using recording techniques such as electrical contact, radio interferometric and photo chronographic techniques simultaneously. Due to different initiating capability of above mentioned HE they developed shock wave generator permitting to vary the pressure of the wave, arriving to HE sample in the interval 30–60 kbar. It was found that the density, sorption specific surface and porosity of HE granules can influence on the value of time delay for detonation origin. Besides the density of HE samples can influence on level of shock wave sensitivity, and existing axial HE samples inhomogeneity may cause the change of time delay of detonation origin by 10%.