

# Crystal particle size and porosity impact on gas-dynamic TATB high explosive performance

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This work presents the results of the investigation into TATB (tri-aminotrinitrobenzene) high explosive (HE) detonation. It considers TATB initiation, development, and propagation as well as the role of crystal particle size and porosity in the processes. Gap-test technique was used to study denotation initiation in TATB HE. Electrocontact technique was used to study denotation development and propagation. Detonation propagation in TATB HE cylindrical samples of various diameters was registered with this technique. Streak photography technique was used to register detonation wave front shape.

The study showed that under similar initiation conditions HE detonation development process is stopped after the detonation wave reaches the distance of 3.5 HE diameters and it does not depend on HE samples porosity and particle size.