METHOD OF ESTIMATION OF SENSITIVITY INDICATORS FOR SOLID HIGH EXPLOSIVES TO IMPACT. I. INDIVIDUAL HIGH EXPLOSIVES

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Abstract: The new method of estimation of critical parameters for impact initiation of solid individual high explosives (HE) on drop-weight machine, based on thermodynamic relationship between thermal energy and pressure in a deformable charge and the solution of the kinetic equation relating local heating of HE to the time of its destruction, is suggested. A good agreement between calculated and experimental results has been demonstated.

Keywords: explosives; impact; explosion; critical conditions of explosion

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References

1. Dubovik, A. V. 1986. Raschet pokazateley chuvstvitel'nosti tverdykh VV k udaru [The calculation of HE impact sensitivity indicators]. *Dokl. USSR Acad. Sci.* 286(2):377–380.
2. Dubovik, A. V. 2011. *Chuvstvitel'nost' tverdykh vzryvchatykh sistem k udaru* [Sensitivity of solid explosives to impact]. Moscow: Izd-vo RKhTU im. D. I. Mendeleeva. 276 p.

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