FOX-7-based melt-cast compositions Amel BELAADA^{1*}, Waldemar A. TRZCIŃSKI²

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Abstract. Low sensitive melt-cast explosive compositions based on 1,1-diamino-2,2-dinitroethene (FOX-7) and containing TNT, NTO, Al and wax were prepared and tested. Sensitivity to impact, friction, shock wave and jet impact were determined, thermal stability and ignition temperature were established. Some detonation properties of the compositions were investigated. The heat of detonation was measured using a calorimetric bomb. Detonation pressure and velocity were determined in a plate-denting test. The results of a cylinder test were used for determination of the Gurney energy, detonation pressure and energy, and the JWL equation of state for the detonation products. The results of sensitivity tests and the detonation characteristics of the FOX-7-based compositions indicate that these compositions are promising as main charge fillings destined for insensitive munitions.

Keywords: FOX-7, low-sensitive explosives, melt-cast explosives.