



**CHM-6**

## Sensitivity and Detonation Characteristics of Plastic Explosive based on BCHMX

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Cis-1,3,4,6-Tetranitrooctahydroimidazo-[4,5d]imidazole (BCHMX) has been studied as explosive filler to replace pentaerythritol tetra-nitrate (PETN) in EPX 1 explosive. BCHMX with different particle sizes was bonded by thermoplastic binder plasticized by dibutyl phthalate (DBP) to obtain BCHMX-EPX. Sensitivity to impact and friction were determined. The detonation velocity was measured experimentally and the detonation characteristics of the prepared sample as well as the pure explosives were calculated by EXPLO 5 thermodynamic code. For comparison, commercial plastic explosives, EPX-1, Semtex 10, Formex P1 were studied. It was concluded that BCHMX-EPX has the highest detonation characteristics of all the studied plastic explosives and its sensitivity is in the same level of the studied traditional plastic explosives. The mutual relationship obtained from the experimental and calculated results indicates the compatibility of the calculated results with the experimental measurements.