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Detonation Velocity Deficits of Superfine Desensitized HMX Charged in Curve Limited Channel

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Abstract: In order to study the detonation velocity deficits of superfine desensitized HMX in curve channel, the relation formula between detonation velocity deficits and corner radius were deduced. The detonation velocity deficits of the HMX charged in curve channel were measured when channel sizes were 0.6 mm × 0.6 mm and 0.8 mm × 0.8 mm, and the relation formula $\bar{D}|_{d=0.6} = \frac{D|_{d=0.6}}{D_j} \cdot \frac{0.753}{Rd^{0.6}}$ and $\bar{D}|_{d=0.8} = \frac{D|_{d=0.8}}{D_j} \cdot \frac{0.734}{Rd^{0.6}}$ were obtained by using the least squares technique. Results show that the empirical formulation is in a good agreement with the semi-empirical formulation.

Key words: explosion mechanics; curved charge in limited channel; detonation velocity deficit; superfine insensitive HMX



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