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- References:**
- [1] Kury J W, Horning H C, Lee E L, et al. Metal acceleration by chemical explosives [A]. 4th Symposium (International) on Detonation [C], USA, White Oak, 1965.
 - [2] Lee E L, Horning H C, Kury J W. Adiabatic expansion of high explosive detonation products [R]. Report UCRL-50422, Lawrence Livermore National Laboratory, Los Alamos, USA, 1968.
 - [3] Horning H C, Lee E L, Finger M. Equation of state of detonation products [A]. 5th Symposium (International) on Detonation [C], USA, Pasadena, 1970.
 - [4] Hornberg H. Determination of fume state parameters from expansion measurements of metal tubes [J]. *Propellants, Explosives, Pyrotechnics*, 1986. 11: 23.
 - [5] Cudzilo S, Trębiński R, Trzciński W A. Determination of the effective exponent of isentrope for the detonation products of high explosives [J]. *Chem Phys Reports*, 1997, 16: 1719.
 - [6] Trębiński R, Trzciński W A. Modelling of the process of driving a cylindrical tube by the detonation products described by the JWL equation of state [J]. *J Tech Phys*, 1997, 38: 4.
 - [7] Trębiński R, Trzciński W A. Determination of an expansion isentrope for detonation products of condensed explosives [J]. *J Tech Phys*, 1999, 40: 4.
 - [8] Trzciński W A. Use of a cylinder test for determining energetic characteristics of explosives [J]. *J Tech Phys*,
 - [9] Trzciński W A, Cudzilo S, Szymańczyk L. Determination of the Detonation Pressure from a Water Test [A]. 30th International Annual Conference of ICT [C], Karlsruhe, Germany, 1999.
 - [10] Gałęzowski D, Trzciński W A, Siwirski M. Heat effects of detonation of explosives in a calorimetric bomb (in Polish) [A]. V International Armament Conference [C], Poland, Waplewo, 2004.
 - [11] Fried L E. CHEETAH 1.39-User's manual [R]. Report UCRL-MA-117541, Lawrence Livermore National Laboratory, Los Alamos, USA, 1996.

圆筒实验数据研究高能炸药的爆轰特性

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摘要: 根据圆筒实验数据,采用新方法计算了 HMX、RDX、PETN、TNT 等炸药的爆轰能,研究了爆轰产物的加速能力,并与 CHEETAH 的计算结果进行了对比。通过爆轰波在柱壳水介质中传播的圆筒实验方法,预估了炸药的爆压。利用实验和热化学计算的结果推导了 JWL 状态方程的待定常数,并依据 JWL 等熵线计算了做功能力。

关键词: 爆炸力学; 高能炸药; 爆轰特性; 状态方程; 圆筒实验; 爆轰能量

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