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三硝基均苯三酚一铵盐的合成、晶体结构、热分析及感度性能研究

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摘要: 合成了三硝基间苯三酚一铵盐 $NH_4(H_2TNPG)$,并对其进行了元素分析及红外表征。利用X射线单晶分析测定了其晶体结构,晶体属于单斜晶系,空间群为C2/*c*,晶体学数据为: $a=9.307(2)$ Å, $b=21.144(6)$ Å, $c=9.797(2)$ Å, $\beta=99.56(3)°$, $V=1901.0(8)$ Å^3, $Z=8$。该化合物是由一个铵根离子与一个一价的三硝基均苯三酚负离子相结合而形成的离子型化合物,分子中存在的大量氢键及铵根离子与三硝基均苯三酚负离子之间的静电引力使得该化合物具有较高的热稳定性和较低的感度。用DSC、TG-DTG技术研究了标题化合物的热分解,研究结果表明: 在10 ℃·min^{-1}的升温速率下,标题化合物只有一个剧烈的放热分解过程,该过程发生在219.2~234.3 ℃之间,分解产物主要是气体产物。感度测试结果表明,该化合物对外部刺激钝感。

关键词: 物理化学; 三硝基间苯三酚一铵; 感度性能; 晶体结构; 热分析

中图分类号: TJ55; O741$^+$.6; O625.32$^+$1 **文献标识码:** A

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更 正 一

2008年第2期188页右栏倒数第4行"图3为250 MPa条件下观察到的HMX颗粒形貌"应为"图3为100 MPa条件下观察到的HMX颗粒形貌"。特此更正。

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