

[1]张衡,赵凤起,张晓宏,等.3 硝基邻苯二甲酸锆的制备及其对双基系推进剂的催化作用[J].火炸药学报,2009,(1):1-4.

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3 硝基邻苯二甲酸锆的制备及其对双基系推进剂的催化作用

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Title: Preparation of Zirconium 3 Nitrophthalate and Its Effect on Combustion of Double base Propellant and RDX CMDB Propellant

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关键词: 物理化学; 3 硝基邻苯二甲酸锆; 燃烧催化剂; 双基推进剂; 燃烧性能

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摘要: 以3 硝基邻苯二甲酸和硝酸氧锆为原料,制备了3 硝基邻苯二甲酸锆,采用元素分析、X射线荧光衍射、FT IR和TG DTG对其结构进行了表征。研究了3 硝基邻苯二甲酸锆对双基和RDX CMDB推进剂燃烧性能的影响。结果表明,3 硝基邻苯二甲酸锆对双基系推进剂燃烧具有良好的催化作用,在低压段能明显提高推进剂的燃速,在中高压段能明显降低燃速压力指数;与铜盐复合后,可显著提高低压段燃速和降低中高压段燃速压力指数。

Abstract: Zirconium 3 nitrophthalate (Zr(3 NO₂ PHT)₂ · 2H₂O) was synthesized by using 3 nitrophthalic acid, sodium hydroxide, and zirconyl nitrate as raw materials, and the structure was determined by elemental analysis, X ray fluorescence diffraction and FT IR spectra. The catalytic action of zirconium 3 nitrophthalate on double base propellant and RDX CMDB propellant was analyzed. The results show that the burning rates of the double base propellant and RDX CMDB propellant increase obviously in the low pressure range, and the pressure exponents of the double base propellant decrease obviously in the

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