

[11] 王萍, 张磊, 蔺向阳, 等. 溶剂浸析法制备硝化棉基微孔球形药[J]. 含能材料, 2015, 23(3): 1107-1110.
WANG Ping, ZHANG Lei, LIN Xiang-yang, et al. Preparation of nitrocellulose-based micro-pores spherical powder by solvent leaching method [J]. *Chinese Journal of Energetic Materials (Hanneng Cailiao)*, 2015, 23(3): 1107-1110.

[12] 蔺向阳, 李翰, 郑文芳, 等. 双乳液法制备微孔球形药孔结构形成机制[J]. 兵工学报, 2016, 37(9): 1633-1638.
LIN Xiang-yang, LI Han, ZHENG Wen-fang, et al. Pore structure formation mechanism of ball propellant with micro-pores made by double emulsion method [J]. *Acta Armamentarii*, 2016, 37(9): 1633-1638.

Structure Controlling of Nitrocellulose Base Ball Propellant with Micro-pores

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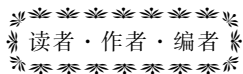
Abstract: In order to control the structure of ball propellant with micro-pores, the factors affecting the particles diameter, surface porosity, particles surface state were explored by adjusting the process parameters and adding alkane solvents. As a result, the viscosity of NC collosol and the emulsion decrease with the solvent dosage increasing, the average particles diameter decrease apparently. When alkane is drawn into emulsion process as pore-forming agent, the ball propellant with open pores at the surface will be obtained. With the increase of alkane dosage, the surface porosity gradually increases, meanwhile. When the leaching method is used to separate solvent, the high particles sphericity will be gotten through decreasing the speed of adding water. The structures of ball propellant with micro-pores can be controlled effectively by adjusting the process parameter and adding alkane into emulsion.

Key words: micro-pores; ball propellant; structure control; nitrocellulose

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