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Structure Controlling of Nitrocellulose Base Ball Propellant with Micro-pores

LIN Xiang-yang，SHAO Shan，LI Han，SUN Yi-long，ZHENG Wen-fang，PAN Ren-ming
(*Chemical Engineering Institute，Nanjing University of Science and Technology，Nanjing* 210094)

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
CLC number：TJ55 **Document code**：A **DOI**：10.11943/j.issn.1006-9941.2017.05.009

读者·作者·编者

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