
Features of use nano- and ultrafine powders oxidants in pyrotechnic compositions

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The methodology of the firing test, the algorithm of the secondary treatment and research of ignition and combustion of pyrotechnic compositions (PS) based on magnesium and sodium nitrate oxidizer-micron-and nanosized dimensions, analysis and comparison. Performed visualization and comparative analysis of the gas-dynamic picture of the expiration of the combustion products of the two types of PS from the nozzle block model gasifier. Given the power laws of the burning rate of PS investigated on the basis of micron-and nanosized oxidant on the pressure. Performed thermodynamic calculations to determine the equilibrium values of temperature, gas constant, relative to the mass concentration phase, the adiabatic combustion of PS. The increase combustion efficiency, reduced ignition delay period of pyrotechnic composition and implementation of a more uniform flow flowing from the nozzle of the combustion products in the case of nanosized oxidant.

Keywords: *pyrotechnic compositions, nanosized oxidant, water, combustion speed, experimental investigation.*

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