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## Application of a New Agent of Low Erosion in the Small Caliber Weapon

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**Abstract:** In order to reduce the erosion and not affect the characteristic of small caliber weapon, a new organic silicon reducing erosion agent was designed and tested. The static combustion and interior ballistic performances of two charges with new organic silicon reducing erosion and 801<sup>#</sup> reducing erosion were characterized by the closed-bomb and 5.8 mm rifle firing tests. The ablation and burning completeness were tested by erosion tube and oxygen bomb method. The results show that the decreasing of the ablation in the charge with new organic silicon reducing erosion is 13.8%. The charge with new organic silicon reducing erosion has obvious properties of low ablation, steady and complete combustion and is suitable for the small caliber weapons.

**Key words:** physical chemistry; low erosion; propellant charge; closed-bomb test; erosion tube test

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