

Title (en)

GRANULAR PROPELLANTS BASED ON NITROCELLULOSE, NITRATED OIL AND POLYVINYL NITRATE AND PROCESS FOR PRODUCING THEM

Publication

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Application

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Abstract (en)

[origin: US4347087A] The present invention relates to propellant powders based on nitrocellulose, nitrated oil and polyvinyl nitrate and also to the process for their manufacture. The powders according to the invention contain between 50 and 75 parts by weight of nitrocellulose, between 5 and 25 parts by weight of nitrated oil and between 5 and 25 parts by weight of polyvinyl nitrate. The manufacturing process consists in malaxating the energy-producing bases in the presence of an acetone/alcohol mixture until a homogeneous paste is obtained, which is extruded, drained, chopped, soaked and dried, and the process is characterized in that (i) the proportion of acetone in the paste during malaxation is between 30 and 36% by weight, relative to the dry nitrocellulose and the dry polyvinyl nitrate, and in that the weight ratio acetone/alcohol is between 1.10 and 1.50, (ii) the first step is to mix the nitrocellulose with the nitrated oil in the presence of solvents, and in that the solid polyvinyl nitrate is added to the mixture in portions, and (iii) the draining before chopping is carried out at a temperature below 30 DEG C. The powders according to the invention are particularly suitable as gunpowder for combat tanks.

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