

# DETONATION OF PRESSED CHARGES OF AMMONIUM PERCHLORATE AND ALUMINUM MECHANOACTIVATED MIXTURES

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**Abstract:** The optimum conditions of mechanical activation of mixtures of ammonium perchlorate (AP) and aluminum were found so that the maximum homogenization of the mixture was provided in the absence of the reaction between reagents. Mixing and activation of components were carried out in a planetary mill “Activator-2sl” with steel balls and drums with water cooling. The activation time ranged from 0.5 to 40 min. Analysis by X-ray diffraction and electron microscopy showed that under selected processing conditions, grinding and mixing occur without the chemical reaction. The results of detonation velocity ( $D$ ) measurements depending on density have shown that in comparison with usual Al/AP mixes, it is possible to receive essentially higher  $D$  that is connected with increase in reactionary ability of the activated mixtures.

**Keywords:** detonation; ammonium perchlorate; aluminum; mechanoactivation

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