

POLITECHNIKA ŚLĄSKA
WYDZIAŁ CHEMICZNY

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ROZPRAWA DOKTORSKA

**SYNTEZA I BADANIE WYBRANYCH ZWIĄZKÓW
WIELKOCZĄSTECZKOWYCH O POTENCJALNYCH
WŁAŚCIWOŚCIACH WYBUCHOWYCH**

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Załącznik 2.

The paper concerns the chemistry and technology of high-energetic polymers. There was made a review of known macromolecular compounds able to explosive burning and developed the concept of thesis. The aim of the thesis was to synthesize selected polymers potentially explosive, their analysis, and the examination of indicated properties. The selected polymers: polyepichlorohydrin, polyvinyl chloride, and polyvinyl alcohol subjected to modification by the introduction of functional groups determining the properties of explosives. This yielded 18 compounds, including two new ones. Compounds contain various functional groups and various structures controlled by polymerization primers. The abrasion and the impact was checked and the thermal stability was determined. The structure of the molecule was identified by: spectroscopic methods (FTIR), elemental analysis, NMR analysis, gas chromatography, differential scanning microcalorimetry, the flame test, determination of the heat of combustion, the decomposition temperature by Boetius method, initiation by shock wave and determination of viscosity of polymer solutions. Findings emphasize the differences in the synthesized polymers due to the type of functional group and resultant of molecular weight checking: less than 10,000 g/mol or greater than 30,000 g/mol.

Work has 160 pages, contains 73 drawings and 22 tables

Key words: high energetic materials ,explosives, azidation, GAP