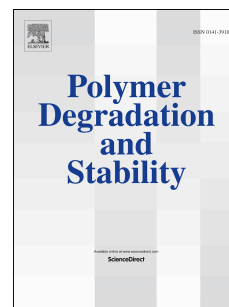


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Thermogravimetric analysis in the evaluation of the inhibition of degradation of rigid poly(vinyl chloride) using biologically active phthalimido aromatic hydrazide derivatives

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ABSTRACT

Four novel antimicrobial phthalimido aromatic hydrazide derivatives were synthesized from N-(4-chlorocarbonylphenyl) phthalimide with benzhydrazide, salicylhydrazide, *p*-aminobenzohydrazide or *p*-aminosalicylhydrazide. They were characterized by FTIR, ¹H-NMR, mass spectra, elemental analyses and antimicrobial activities. These derivatives were investigated as thermal stabilizers for rigid PVC using thermogravimetric analysis technique, in nitrogen. The results revealed the greater stabilizing efficiency of the investigated derivatives as shown by their higher initial decomposition temperature and higher residual weight percent in relation to dibasic lead carbonate (DBLC), cadmium-barium-zinc (Cd-Ba-Zn) stearate and n-octyltin mercaptide (n-OTM) industrial stabilizers. The stabilizing efficiency increased with the introduction of electron donating substituent groups in the aromatic ring of the phthalimido aromatic hydrazide derivatives.

Keywords: Phthalimido aromatic hydrazide derivatives; Antimicrobial activity; Thermal stability; PVC; Thermogravimetry

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