

Turkish Journal of Chemistry

Turkish Journal


of

Chemistry

A New Flame-Retardant Polyamide Containing Phosphine Oxide and N,N-(4,4-diphenylether) Moieties in the Main Chain: Synthesis and Characterization

Khalil FAGHIHI

Organic Polymer Chemistry Research Laboratory, Department of Chemistry,
Faculty of Science, Arak University, 38157, Arak-IRAN
e-mail: k-faghihi@araku.ac.ir

 [Keywords](#)
[Authors](#)



chem@tubitak.gov.tr

[Scientific Journals Home
Page](#)

Abstract: A new flame-retardant polyamide containing phosphine oxide moieties in the main chain was synthesized from the solution polycondensation reaction of bis(3-aminophenyl) phenyl phosphine oxide with N,N-(4,4-diphenylether) bis trimellitimide, using thionyl chloride, N-methyl-2-pyrrolidone, and pyridine as condensing agents. This new polymer was obtained in high yield (92%), has high inherent viscosity (0.73 dL/g), and was characterized by elemental analysis, FT-IR spectroscopy, thermal gravimetric analysis (TGA and DTG), and solubility testing. Furthermore, another polyamide was prepared by the solution polycondensation reaction of N,N-(4,4-diphenylether) bis trimellitimide with 1,4-phenylene diamine, and its flame-retardant behavior was compared to that of the previous one.

Key Words: Flame-retardant polymers, phosphine oxide moieties, N,N-(4,4-Diphenylether) bis trimellitimide

Turk. J. Chem., **30**, (2006), 643-651.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Chem.,vol.30,iss.5.](#)