

**NANOCOMPOSITES OF POLYPROPYLENE/POLYAMIDE
BLENDS BASED ON THREE DIFFERENT NANOCLAYS:
THERMAL STABILITY AND FIRE RETARDANCY**

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The influence of various layered silicates: sepiolite (needle-like structure), halloysite (nanotube structure) or organomodified montmorillonite (lamellar structure) in combination with a phosphorous flame retardant (diethylphosphinate) on the properties and morphologies of compatibilized PP/PA-6 blends has been investigated. The blends were prepared using a twin screw extruder and different strategies were applied to achieve nanoparticles dispersion. The thermal degradation and fire retardancy of these blends were explored using TGA, cone calorimeter, LOI, microcalorimeter of combustion (PCFC) tests regarding their morphologies. The coupled TGA/FT-IR, Py-GC/MS and EDX analysis were used to evaluate the flame retardant mechanism of phosphinate in condensed and vapor phase.