

Preparation of the Modified Diisocyanate with Melamine Phosphate

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Melamine phosphate has efficient flame retardant property and is extensively used to prepare flame retarding polymeric materials via physical treatments such as compounding and emulsifying. In this presentation, we demonstrate the synthesis of the modified diisocyanate with melamine phosphate, which is used to prepare flame retarding polyurethane. Aminosilane is used as coupling agent to chemically combine melamine phosphate and then diisocyanate. The reaction rates and conversions of the two-step modification will be discussed. The characterization of the intermediate, by-product, and the modified diisocyanate is performed using FT-IR spectrometer, scanning electron microscope, particle size analyzer, and differential scanning calorimeter