

### Synthesis of Polyesterdiol Composite with Melamine Phosphate and Nano Clay

신승욱, 최지혜, 오민지, 이상호\*  
동아대학교  
(Sangho@dau.ac.kr\*)

The polyesterification between adipic acid(AA) and diethylene glycol(DEG) was performed with melamine phosphate(MP) and organo nanoclay(Cloisite 30B) which the both are expected to have fire retardancy. Different from the Polyesterdiol-MP and the Polyesterdiol-Clay composite made in our precedent study, we simultaneously added MP and Cloisite 30B at the beginning of polyesterification and synthesized the Polyesterdiol-MP-Clay composite. The polyesterification was catalyzed by Butylchlorotin dihydroxide at the concentration of  $([AA]/[catalyst]) = 0.005$ . The molar ratio of  $[DEG]/[AA]$  was 2 in the initial reactant mixture. Prior to performing the polyesterification, MP and 30B were dispersed by a sonicator and a homogenizer. The polyesterification conversion was determined using acid value and GC/Mass data. The molecular weight and the component of the Polyesterdiol composite were analyzed with GPC and FT-IR data, respectively. From the FT-IR, it is assumed that the hydroxyl group of MP did not react with DEG