Thermal and Mechanical Interfacial Properties of Epoxies Initiated by Latent Thermal Catalysts

석수자*, 박수진
한국화학연구원
(kindness@krict.re.kr*)

In this work, the epoxy resins (DGEBA) were cured by two cationic latent thermal catalysts, i.e., N-benzylpyraziniumhexafluoroantimonate (BPH) and benzyl-2,5-dimethylpyraziniumhexafluoroantimonate (BDPH) to investigate the effect of substituted methyl group in thermal and mechanical interfacial properties of the coating specimens. Cure behaviors of the epoxies were determined by dynamic DSC. The mechanical interfacial properties of the system were also characterized in term of critical stress intensity factor (KIC). As a result, the conversion and cure activation energy of the DGEBA/BDPH system were higher than those of DGEBA/BPH system. The KIC of DGEBA/BDPH system was also superior to that of DGEBA/BDPH. This was probably due to the consequence of the effect of substituted methyl groups of BDPH catalyst, resulting in increasing the crosslinking density and structural stability in the epoxies studied.