Thermal and Dynamic Mechanical Properties of Epoxy/PMR-15 Blend System Initiated by Cationic Thermal Latent Catalyst

이화영, 박수진*, 한미정
한국화학연구원 화학소재연구부
(psjin@krict.re.kr*)

In this work, the cure behaviors of epoxy/PMR-15 blends initiated by *N*-benzylpyrazinium hexafluoroantimonate (BPH) as a cationic latent catalyst are performed by means of DSC and DMA analyses. And, the thermal stabilities are carried out by TGA analysis and mechanical interfacial properties of blends are measured in the context of critical stress intensity factor (K_{IC}) and critical strain energy release rate (G_{IC}). As results, it is found that the BPH shows good thermal latent properties in this blend system and the cure reaction of this blend system is strongly dependent on the cure temperature. The thermal stabilities obtained from the integral procedural decomposition temperature (IPDT) and the glass transition temperature (T_g) are increased with increasing the PMR-15 content, which are probably due to a high curing temperature and heat resistance of PMR-15, resulting in increase of thermal stabilities of epoxy/PMR-15 blend system.