Abstracts

Dielectric and Temperature Measurements During Microwave Curing of Epoxy in a Sweeping Resonant Cavity

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A TM/sub 012/ -mode cylindrical cavity was mechanically critically couple with a microwave circuit at 3.2 GHz. A fluoroptic temperature sensing device was used to monitor temperature in the microwave environment. Stoichiometric mixtures of epoxy (DER 332) and amine (DDS) were heated in this sweeping resonant cavity for curing times of 10 and 30 minutes, respectively. On-line temperature and dielectric properties versus time profiles were measured during the curing process. The dielectric properties versus temperature also measured during cooling. Thereafter, extent of cure of epoxy was determined Differential Scanning Calorimeter.

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