

Background

The hardening of two-part epoxy adhesive starts by mixing epoxy resin with a hardening accelerator. The analytical method of hardening materials is limited, because of the low amount of sample, and its difficulty to solubilize. The hardened material was analyzed with ionRocket heating system connected to the DART®-MS without pretreatment.

Samples

Two-part epoxy adhesive (marketed production, solution A and solution B).

Methods

The analyzing tool was the ionRocket heating system connected to the DART®-MS (Direct Analysis in Real Time - Mass Spectrometry).

Results

TIC is shown in Fig 1. MS spectra measured at 200°C is shown in Fig 2.

In Fig 2, the principal component of solution A was BADGE (bisphenol A diglycidylether) and bisphenol A diacetate.

The principal solution B was accelerating agent DMP-30.

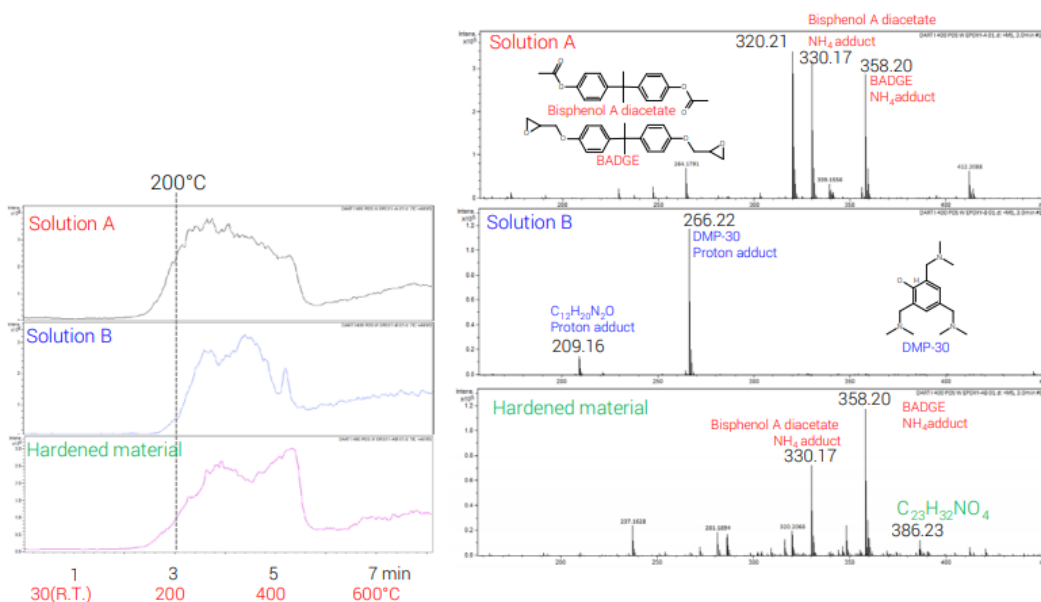


Fig. 1 TIC of each sample.
R.T. 100°C/min 600°C

Fig. 2 MS spectrum measured at 200°C.
The preset temperature of DART®-SVP was 400°C.
Ionization was DART® positive.

Target

Material development, chemical industry, foreign material analysis