

The Analysis of Two-part Epoxy Adhesive by ionRocket

[Background] The hardening of two-part epoxy adhesive is started by blending epoxy resin and hardening accelerator. The analytical method of hardened materials is limited, because of the low amount of sample and its difficult solubility. We tried to analyze the without pretreatment.

[Samples] Two-part epoxy adhesive (marketed production, solution A and solution B)

[Methods] Analysis system was composed with ionRocket, heating system, was connected to the DART-MS (Directed analysis in real time- mass spectrometry).

The liquid epoxy adhesives solution A and solution B, were put on the POT and analyzed. After the blending solution A with solution B, the hardened material was flaked with a razor. The small quantities of hardened material were put on the POT and analyzed. The temperature was increase at 100 °C per min, from 30 °C to 600 °C.

[Results] TIC was shown in Fig. 1. The MS spectra of measured at 200 °C, were shown in Fig. 2. From Fig. 2, The principal component of solution A were BADGE (bisphenol A diglycidylether) and bisphenol A diacetate. The principal component of solution B was accelerating agent DMP-30.

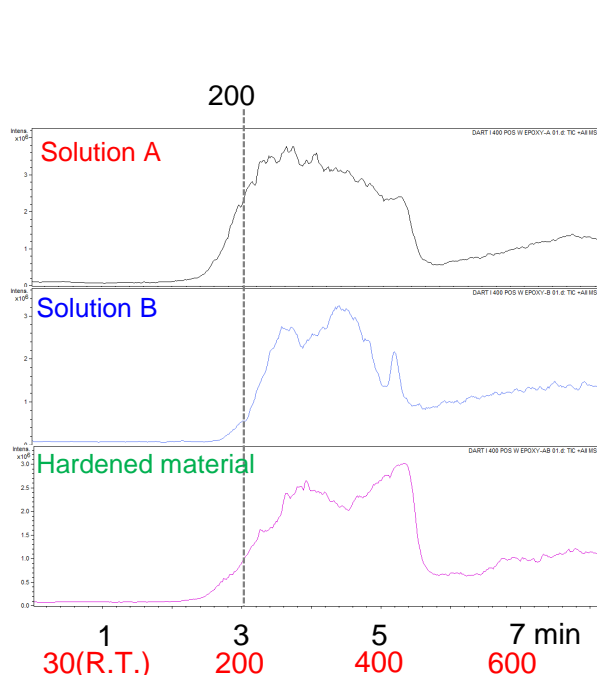
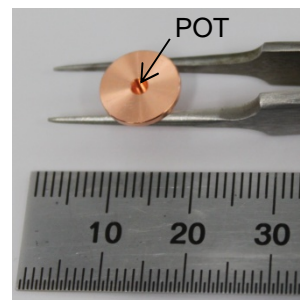


Fig. 1 TIC of each sample.
R.T.→100°C/min→600°C

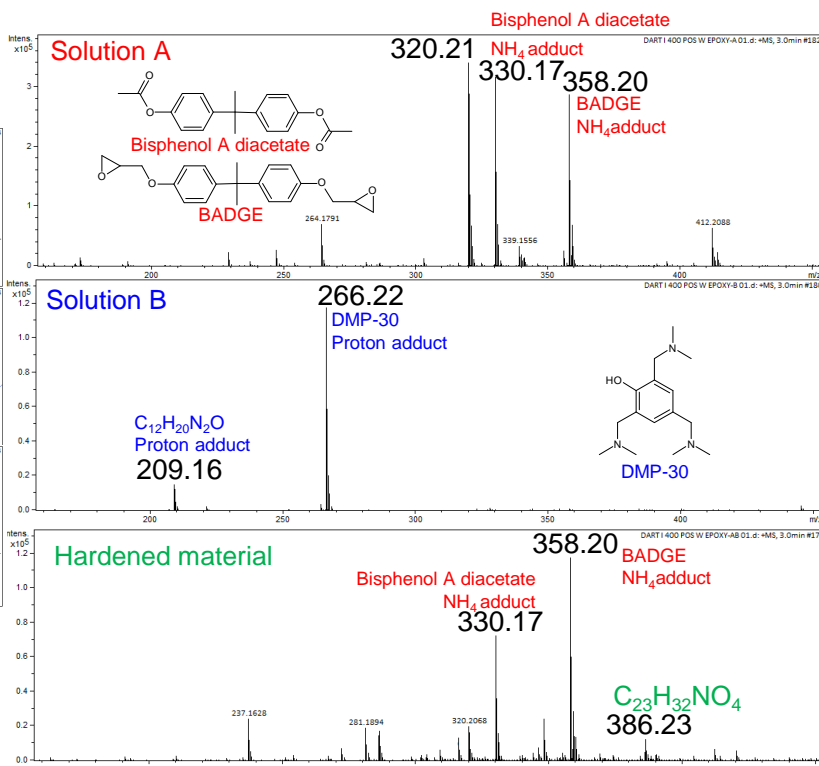
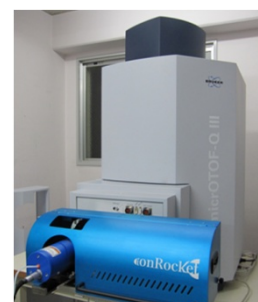


Fig.2 MS spectrum measured at 200 °C.
The preset temperature of DART-SVP was 400 °C
Ionization was DART positive.

[Keyword] Epoxy adhesive, hardening material, composition analysis, bisphenol A

[Target] Adhesive material development, chemical industry, foreign material analysis



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