

The Analysis Application of PET, PBT by ionRocket-DART-MS

[Background] Analysis of the condensation polymer containing ester linkages in the main chain, such as PET and PBT, in case of pyrolysis GC/MS analysis, in order to suppress the thermal decomposition products, TMAH (tetramethyl ammonium hydroxide) were added. Such a methylating agent was unnecessary and subjected to DART-MS analysis using a ionRocket that can quickly analyze without any pretreatment.

[Samples] PET, PBT

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

The small quantities of samples were put on the POT and analyzed. The temperature was increase at 100 °C per min, from 30 °C to 600 °C.

[Results] TIC were shown in Fig.1. The MS spectra of measured at 400 °C were shown in Fig. 2. From Fig.2, their monomers and dimers were mainly observed. In order to distinguish between PET and PBT, comparison of DART-MS spectra was meaningful.

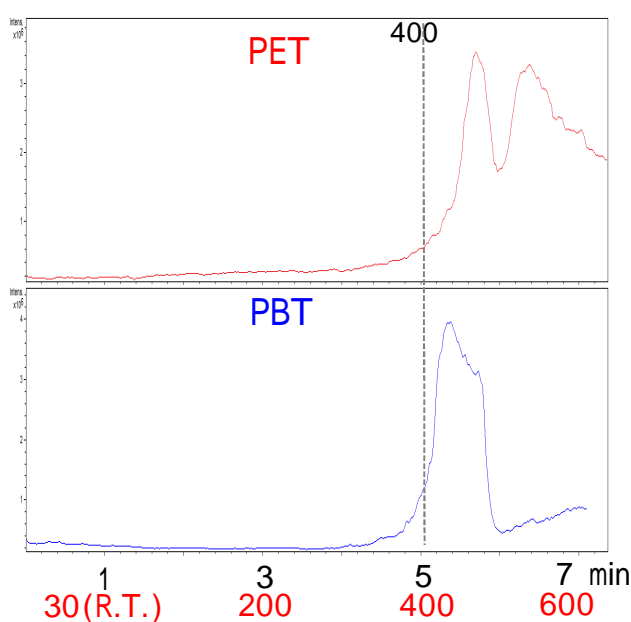
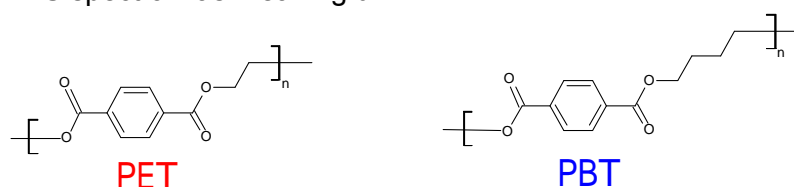
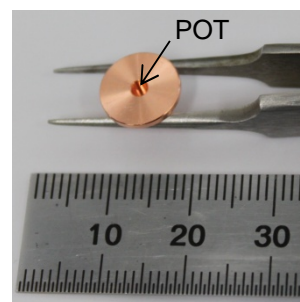


Fig.1 TIC of PET and PBT

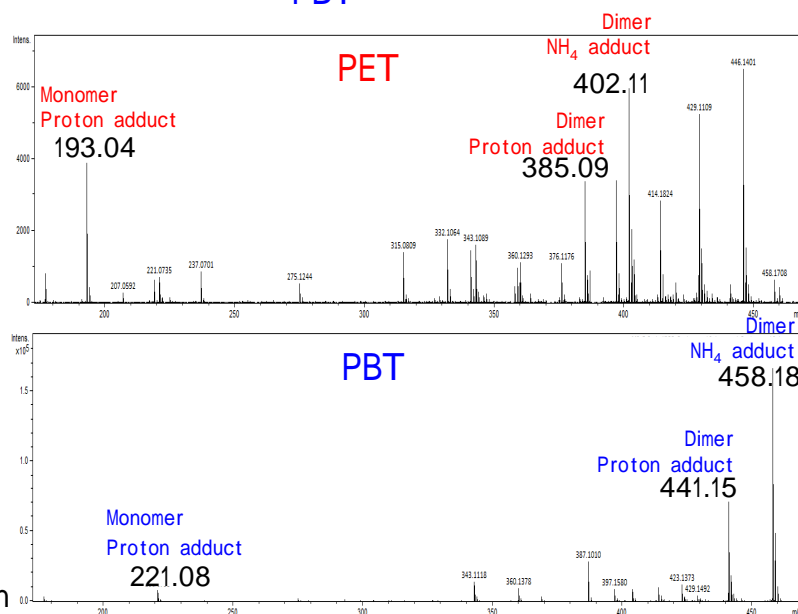


Fig.2 MS spectrum measured at 400 °C. The preset temperature of DART-SVP was 400 °C ionization was DART positive.

[Keyword] DART-MS, PET, PBT,

[Target] Material development, Chemical industry, Foreign material analysis

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