

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

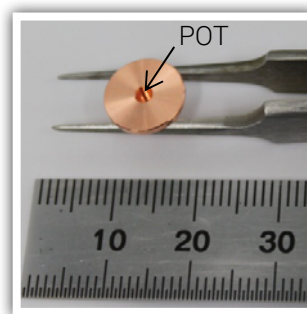
## [BACKGROUND]

Typical analysis of the condensation polymers containing ester linkages such as PET and PBT by pyrolysis GC/MS is performed by adding the methylating agent TMAH (tetramethyl ammonium hydroxide), in order to suppress thermal decomposition of unknown. This pretreatment is not necessary with the ionRocket.

**[SAMPLES]** PET, PBT.

## [METHODS]

The analyzing tool was the ionRocket heating system connected to the DART®-MS (Direct Analysis in Real Time - Mass Spectrometry). Small quantities of the samples were put on the POT and analyzed. The temperature was increased at a rate of 100°C per minute, from 30°C to 600°C.



## [RESULTS]

TIC is shown in Fig 1. MS spectra measured at 400°C is shown in Fig 2.

In Fig 2, the monomers and dimers were mainly observed.

The comparisons of ionRocket-DART®-MS spectrum made it possible to distinguish between PET and PBT.

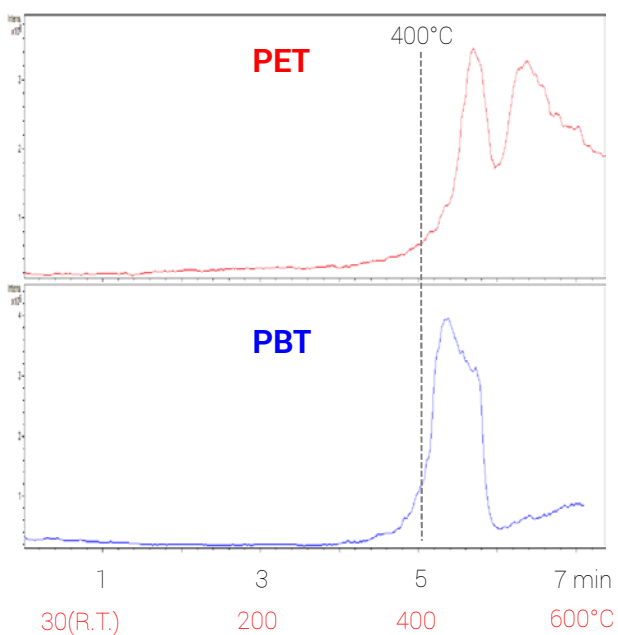
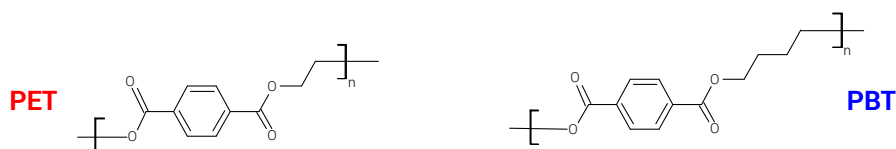


Fig.1 TIC of PET and PBT

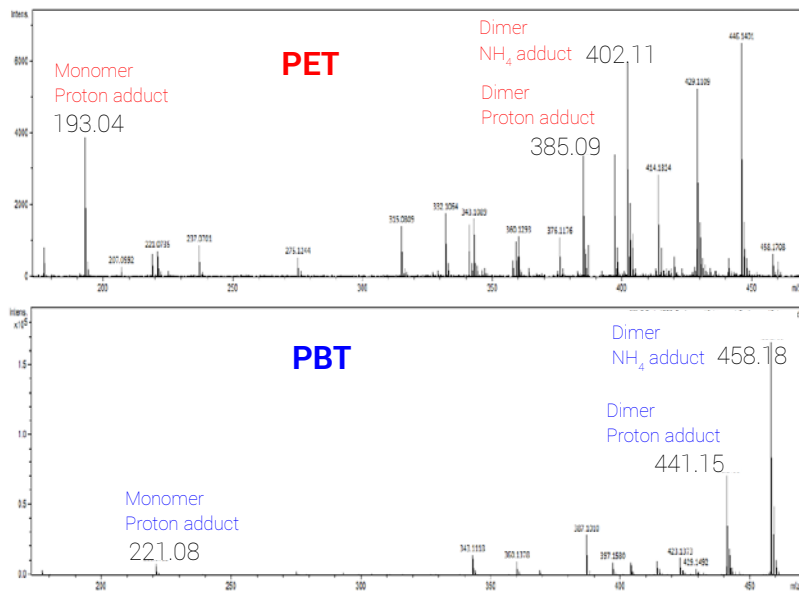


Fig.2 MS spectrum measured at 400°C  
The preset temperature of DART®-SVP was 400°C  
Ionization was DART® positive.

**[TARGET]** Material development, chemical industry, foreign material analysis