Reproducibility of EGA Curves In Evolved Gas Analysis (EGA)

EGA is a thermal analysis technique in which a sample is continuously heated and gases evolved are not separated but directly detected. Data obtained by this technique provides useful information such as thermal desorption conditions of volatile components released from sample and start/end temperatures of pyrolysis[1)]. The reproducibility of EGA curves utilizing Double-Shot Pyrolyzer® is described here. Fig. 1. shows EGA curves of polystyrene (PS) obtained by heating a sample from 100ºC to 600ºC at 20ºC/min. The process was repeated 5 times. A peak arising from thermal decomposition of PS is observed at 340ºC~470ºC in each run. The average temperature of 5 peaks was 441.6ºC+/-1ºC (top of peak). This clearly shows that excellent reproducibility has been obtained.

1) *Double-Shot Pyrolyzer® Technical Note*, PYT-004

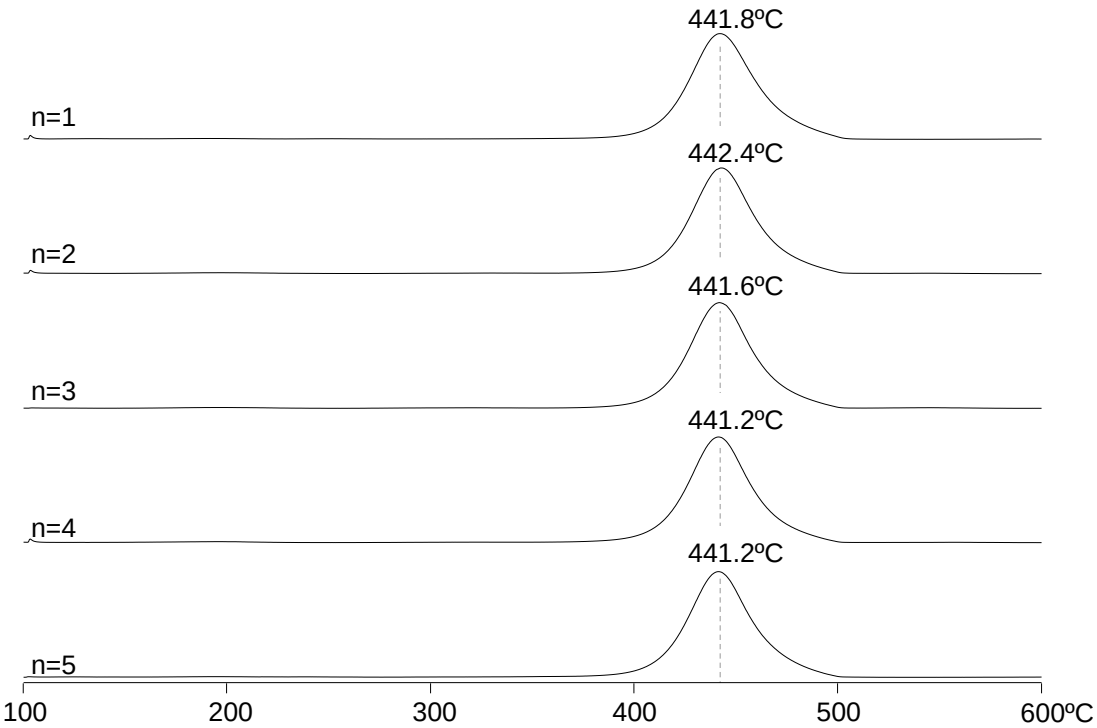

Fig. 1 EGA Curves of PS

Pyrolysis temp.: 100~600ºC (20ºC/min), Carrier gas : He 50kPa, Split ratio: ca. 1/50
EGA capillary tube : Id 0.15mm, Length 2.5m (UADTM-2.5N)
GC oven temp.: 300ºC, Injection temp.:320ºC, Sample : 30µg, Detector : FID

Keywords : Evolved Gas Analysis, Reproducibility

Products used : Multi-functional pyrolyzer, UADTM-2.0N

Applications : General Polymer Analysis

Related technical notes :

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