

Features of Double-Shot Pyrolyzer® PY-2020D & iD

Part 3: Elution of High Boiling Components and its Importance

High Performance and High Reliability

References:

Part 1: Excellent Reproducibility of Pyrograms (Technical Note No.PYT-001E)

Part 2: Inertness and Small Dead Space from Sampler to Detector (Technical Note No.PYT-002E)

Part 3 System structure with minimized cold spots from sampler to detector

In analysis of high boiling components generated from pyrolysis of a polymer, it is extremely important that there should be no cold spots in the flow path from the pyrolyzer to the column inlet. Our Double-Shot Pyrolyzer has a dedicated heater to heat the interface (ITF) located between the pyrolyzer and the GC inlet, allowing the flow path with minimal cold spots. Therefore, as shown in Fig. 1 high boiling components such as C₄₀ are eluted off in 87% yield of the theoretical value. This demonstrates that our Pyrolyzer offers far better elution performance compared to conventional pyrolyzers.

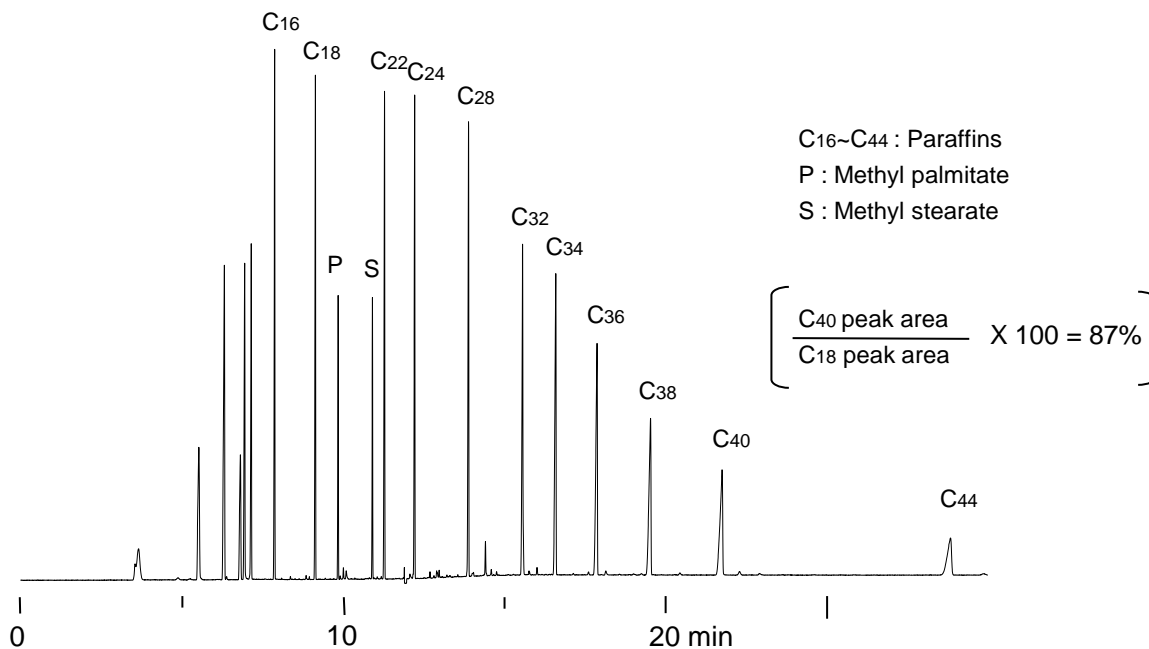


Fig. 1 Elution Performance of High Boiling Components (by thermal desorption)

Column: 5% diphenyl dimethyl polysiloxane, 30m, 0.25mm id, film thickness 0.25µm (UA5-30M-0.25F, from Frontier Labs)
 Thermal desorption temp.: 50~350°C(3min) at 30°C/min, PY-GC ITF Temp.: 320°C, GC oven temp.: 70°C~340°C at 20°C/min, Inlet temp.: 320°C
 Detector: FID 350°C, Carrier gas: He 140kPa, Split ratio: 1/60, Sample: Test Mix-2, 5µL, 500ppm each (hexane solution)

Keywords : Basic Performance, Py-GC System, Elution of High Boiling Components

Products used : Multi-functional pyrolyzer, UA-5

Applications : Polymer Chemistry, Environmental Science, Quality Assurance

Related technical notes :

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