

[GC-MS Analysis of Heart-Cut Fractions During Evolved Gas Analysis of Polymeric Materials](#)

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LCGC North America 20 (2002) 374-378

Abstract:

The combination of evolved gas analysis, trap-and-purge sampling of desired portions of the evolved fraction (heartcutting), and gas chromatography-mass spectrometry characterization (GC-MS) can be a very powerful method to investigate complex polymeric materials. The authors conducted a preliminary survey by conventional evolved gas analysis and MS total ion detection to select evolution temperature ranges for heart-cut fractions in subsequent GC-MS analyses. In the heart-cut evolved gas analysis with GC-MS analysis, each heart-cut fraction was cryo-trapped and analyzed by high-resolution capillary GC-MS. They used MS library searching to identify the components in each fraction and to comprehensively characterize the polymeric materials with regard to substrate polymers and additives such as plasticizers and stabilizers.

* Excerpted from online journal website (Click the title)

Frontier Labs products used:

Multi-functional Pyrolyzer, Selective Sampler, MicroJet Cryo-Trap, UA-5