

[Quantitative Analysis of Red Phosphorus in Polypropylene by Evolved Gas Analysis Mass Spectrometry](#)

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Abstract:

Quantitative analysis of red phosphorus in polypropylene was studied using a temperature programmable pyrolyzer in combination with a mass spectrometer. Evolved gas analysis (EGA) profiles were obtained by continuous measurements of evolved gases from a sample while heating the sample at a constant heating rate. During heating of the sample, red phosphorus sublimates into P₄ molecules, which have characteristic ions (m/z 31, 62, 93 and 124). Red phosphorus in polypropylene was determined from the m/z 62 ion peak area of the EGA profile with good reproducibility. The determined value was close to the value of original formulation and to the one determined by pyrolysis-GC/MS.

* Excerpted from online journal website (Click the title)

Frontier Labs Products used:

Multi-Shot Pyrolyzer (EGA/PY-303D), Ultra ALLOY⁺-5, UADTM-2.5N