Determination of Total and Speciated Sulfur Content in Petrochemical Samples Using a Pulsed Flame Photometric Detector

Abstract
The pulsed flame photometric detector (PFPD) has the advantage of being able to measure the concentration of individual sulfur compounds and total sulfur content in a petrochemical sample in a single gas chromatography run. Because it is an equimolar response detector, the PFPD’s sulfur response is independent of a compound’s molecular structure, and this feature allows quantitation of the total and speciated sulfur content in complex samples using a single calibrant. This paper is a survey describing a variety of applications using the PFPD for sulfur quantitation in petrochemical matrices. Several different approaches to quantitation are described, and simple techniques for circumventing the quenching of the sulfur signal by coeluting hydrocarbon peaks are discussed. Examples from a range of real-world samples are presented.1


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