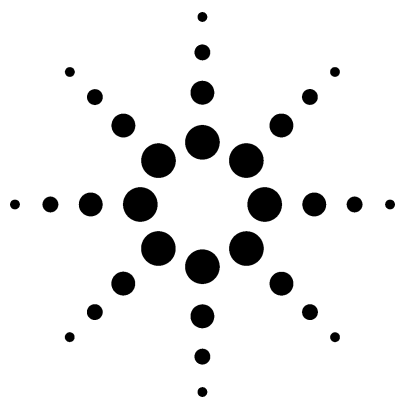


Sulfur Compounds in Air – Agilent Model 355 SCD



Technical Overview

Introduction

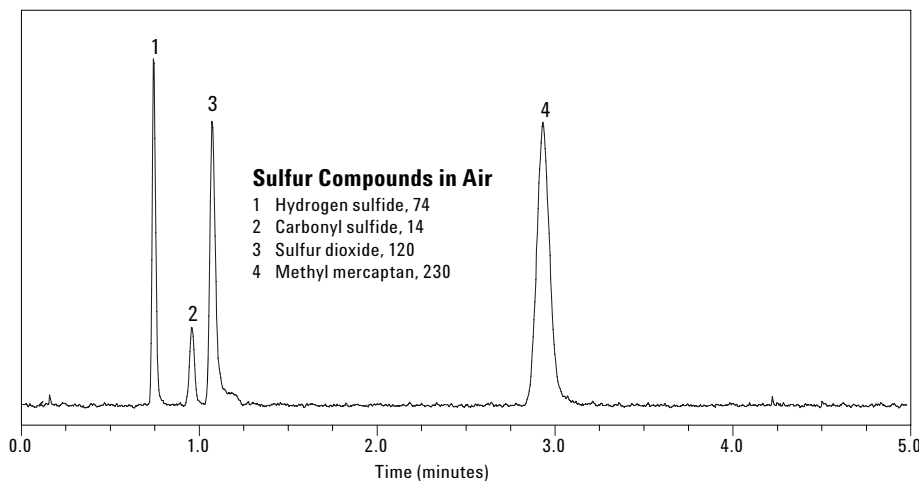
The reliable measurement of sulfur gases in air is extremely important. Many sulfur compounds are toxic and notorious for their obnoxious odors even when present at only parts per billion levels. Gaseous sulfur compounds may be generated and emitted by various industrial processes, such as petroleum refining, ore smelting, and kraft paper pulping. Measurement of gaseous sulfur compounds aids in protection of the environment and human health. There are numerous natural sources of sulfur gases—vegetation, animals, soils, volcanoes, etc.—and measurement of sulfur gases is also of great importance in understanding atmospheric chemistry.

Gas chromatography with sulfur chemiluminescence detection (SCD) provides a rapid means to identify and quantify various sulfur compounds that may be present in air. Unlike other sulfur

selective detectors, such as the flame photometric detector (FPD), the SCD produces a linear and equimolar response to sulfur compounds without significant hydrocarbon quenching or interferences. Furthermore, the Model 355 SCD is at least 10 times more sensitive and 100 times more selective than the FPD.

The following chromatogram illustrates the ability of the SCD to speciate and quantitate sulfur compounds at levels less than 1 ppm in an air sample without any sample preconcentration.

Conditions are as follows: Model 355 SCD operated according to standard conditions; 1 mL sample size; column: 30 m, 0.32 mm id, 4 μ m methyl silicone WCOT fused silica; temperature program: -25°C isothermal. The gas chromatograph was a Agilent Technologies Model 5890 Series II equipped with electronic pressure programming for compressing the initial bandwidth.



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