# Trace Sulfur Compounds in Gases and Light Petroleum Liquids

## ASTM D5623

Configuration of an Agilent Technologies 7890A Gas Chromatograph with a sulfur chemiluminescence detector (SCD) for the trace sulfur components. The system is configured for the determination of volatile sulfur-containing compounds in light petroleum liquids. This test method is applicable to distillates, gasoline motor fuels (including those containing oxygenates) and other petroleum liquids with a final boiling point of approximately 230°C (450°F) or lower at atmospheric pressure.

Based on ASTM D5623, the SCD identifies the following compounds in light petroleum liquids to a lower quantifiable limit of 0.2 ppm:

- Hydrogen sulfide
- Carbonyl sulfide
- Sulfur dioxide
- Methanethiol
- Ethanethiol
- Dimethyl sulfide
- Carbon disulfide
- 2-Propanethiol
- 2-Methyl-2-propanethiol
- 1-Propanethiol
- Ethyl methyl sulfide
- 2-Butanethiol
- Thiophene
- 2-Methyl-1-propanethiol
- Diethyl sulfide
- 1-Butanethiol
- Dimethyl disulfide
- c-1-Benzothiophenes (composite)
- c-2-Benzothiophene (composite)
- Diphenyl sulfide

Analysis will be developed per ASTM D5623: "Standard  Sulfur Compounds in Light Petroleum Liquids by Gas Chromatography and Sulfur Selective Detection." Heavier sulfur compounds will be detected, but may have some compounds co-eluting.