

Agilent Model 355 Sulfur Chemiluminescence Detector (SCD): Sulfur Dioxide in Beer

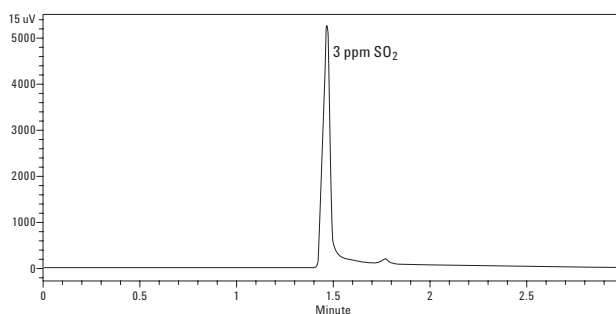
Technical Overview

Introduction

Sulfur dioxide (SO_2) is important in the brewing process. The detection of SO_2 in beer can be performed rapidly using headspace gas chromatography and sulfur chemiluminescence detection.

SO_2 is produced in small amounts during the brewing process, usually at concentrations of < 10 ppm. These small concentrations of SO_2 are desirable to help retard oxidative changes that can impair fresh beer flavor and shorten the shelf life. Because this naturally occurring SO_2 can be lost during the brewing process, some brewers will add sulfite to increase the SO_2 concentration. A concentration of > 20 ppm, however, will produce a sharp biting sulfurous odor, and if the concentration of SO_2 exceeds 10 ppm at the time of packaging the brewer must declare the sulfite content on the label. By using headspace gas chromatography and the Agilent 355 Sulfur Chemiluminescence Detector (SCD), a rapid analysis and quantification of SO_2 can be performed. The technique provides the sensitivity, selectivity, and linear response required to analyze SO_2 successfully.

Note: Sulfur dioxide plays a similar role in wine production, hence the SCD can be used for this analysis as well.



Chromatographic Conditions

Injector temperature:	120 °C
Initial temperature:	150 °C (isothermal)
Injection type:	Splitless
Injection volume:	1 mL headspace
Column flow:	1.0 mL/minute
Column type:	Supelco SPB-1
Column length:	30 m
Internal diameter:	0.32 mm
Film thickness:	4 µm

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