Australian Standard®

Methods for sampling and analysis of ambient air

Method 8.1: Determination of hydrogen sulfide—Automatic intermittent sampling—Gas chromatographic method

PREFACE

This Standard was prepared by the Standards Australia Committee on methods for examination of air under the direction of the Chemical Standards Board, to supersede AS 2330—1980, *Ambient air—Determination of hydrogen sulphide—Automatic intermittent sampling—Gas chromatographic method.* This Standard is technically identical with AS 2330 with only editorial and formatting changes being made.

METHOD

1 SCOPE. This Standard sets out a gas chromatographic method for measuring the concentration of hydrogen sulfide in ambient air using an automatic intermittent sampling procedure. The method is applicable to ambient air having a concentration of hydrogen sulfide within the approximate range 0.003 p.p.m. to 2 p.p.m. (5 $\mu g/m^3$ to 3000 $\mu g/m^3$) and is specific to hydrogen sulfide.

2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS	
2922	Ambient air—Guide for the siting of sampling units
3580	Methods for sampling and analysis of ambient air
3580.2.1	Method 2.1: Preparation of reference test atmospheres—Permeation tube method
3580.4.1	Method 4.1: Determination of sulfur dioxide—Direct reading instrumental method

3 DEFINITIONS. For the purpose of this Standard the definitions in AS 3580.4.1 apply.

4 PRINCIPLE. Measured test portions of sampled air are drawn off and delivered at regular intervals into a gas chromatographic system. Hydrogen sulfide is separated from other sulfur compounds, and is detected and measured flame-photometrically at a wavelength specific for sulfur.

5 APPARATUS.

5.1 Gas chromatograph—designed to automatically sample air at least 10 times per hour, fitted with a flame photometric detector and a column to separate hydrogen sulfide from other sulfur compounds. The components of the apparatus coming into contact with the sample shall be manufactured from material which is demonstrably unreactive with the sample.

The range, sensitivity, zero drift, span drift and repeatability shall be appropriate to the concentration of hydrogen sulfide being measured. However, the following minimum requirements shall apply:

(a) Ranges . . . . 0 to 300 $\mu g/m^3$ and 0 to 3000 $\mu g/m^3$.

(b) Limit of detection . . . . 6 $\mu g/m^3$.