

Australian Standard®

Methods for sampling and analysis of ambient air

Method 2.2: Preparation of reference test atmospheres—Compressed gas 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 2573—1982, *Ambient air—Preparation and use of reference test atmospheres—Compressed gas method*.

The procedure is an alternative to the permeation tube method described in AS 3580.2.1.

METHOD

1 SCOPE. This Standard sets out a method for the preparation of reference test atmospheres containing known concentrations of determinand(s), using a calibration gas dilution procedure. The method is suitable for preparing reference test atmospheres containing determinand(s) in the concentration range 0.01 p.p.m to 100 p.p.m. by volume.

The method is applicable to components which do not react with each other or with the cylinder walls, and which remain totally vaporized in the cylinder at all pressures and temperatures anticipated during the preparation and use of the reference test atmosphere.

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

- AS
- 2030 SAA Gas Cylinders Code
- 2473 Valves for compressed gas cylinders (threaded outlet)
- 3580 Methods for sampling and analysis of ambient air
- 3580.2.1 Method 2.1: Preparation of reference test atmospheres—Permeation tube method.

3 DEFINITIONS. For the purpose of this Standard the following definitions apply.

3.1 Certified reference material (CRM)—a volumetrically prepared gas mixture, 'named' by a gas manufacturer and certified by the National Bureau of Standards of the United States of America (NBS) according to a procedure specified by the NBS, and being directly traceable to a standard reference material (SRM). The concentration of a CRM lies within 1% of that of the corresponding SRM.

3.2 Standard reference material—a gas mixture volumetrically prepared by gas manufacturers and 'named' by the NBS by comparison with gas standards prepared by NBS. A statement of the accuracy limits (generally within 1% of its true value) is always included.

4 PRINCIPLE. The reference test atmosphere is produced by the volumetric dilution of a calibration gas mixture.