Australian Standard®

Methods for sampling and analysis of ambient air

Method 6.1: Determination of ozone—Direct-reading instrumental method

PREFACE

This Standard was prepared by the Standards Australia Committee on Methods for Examination of Air to supersede AS 2524—1982. The differences between this Standard and AS 2524 are in reformatting to incorporate editorial amendments and the inclusion of a specification for zero air.

The requirements for instruments specified in this Standard were derived from and are substantially similar to those given in the United States Environmental Protection Agency (USEPA) *Air regulations pollution control guide*, Part 53—*Ambient air monitoring reference and equivalent methods*, Section 8183, Subpart B—*Procedures for testing performance characteristics of automated methods*. Acknowledgement is made of the assistance obtained therefrom.

Instruments bearing the USEPA equivalency designation dominate the Australian scene where scope for testing and certification is limited. Accordingly it is necessary to accept the USEPA designation of instruments with minor modifications, where appropriate, for local requirements. The USEPA definitions for performance characteristics vary considerably in presentation (if not in substance) from those currently prescribed in ISO 6879, *Air quality—Performance characteristics and related concepts for air quality measuring methods*, but have nevertheless been retained, virtually intact, for the sake of preserving consistency with the USEPA.

METHOD

1 SCOPE. This Standard sets out a method for determining ozone in ambient air using a direct-reading instrument. The method applies to the determination of ozone in ambient air within the concentration range 0 to 0.5 p.p.m by volume (0 to 1000 $\mu g/m^3$).

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

AS

1336 Recommended practices for eye protection in the industrial environment

1337 Eye protectors for industrial applications

1338 Filters for eye protectors

2922 Ambient air—Guide for the siting of sampling units

3580 Methods for sampling and analysis of ambient air

3580.4.1 Methods 4.1: Determination of sulfur dioxide—Direct-reading instrumental method

3 DEFINITIONS. For the purposes of this Standard, the definitions given in AS 3580.4.1 apply.

4 PRINCIPLE. For ultraviolet absorption type instruments, the sample air containing ozone is passed through a flow cell. Ultraviolet energy of wavelength 254 nm passes through the cell and the resultant energy is detected by a photomultiplier. The degree of absorption is dependent on the number of ozone