Australian/New Zealand Standard™

Stationary source emissions

Part 3: Determination of odour concentration by dynamic olfactometry

Standards Australia

STANDARDS NEW ZEALAND

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EV-007, Methods for Examination of Air. It was approved on behalf of the Council of Standards Australia on 31 July 2001 and on behalf of the Council of Standards New Zealand on 1 August 2001. It was published on 12 September 2001.

The following interests are represented on Committee EV-007:

Australian Aluminium Council
Australian Chamber of Commerce and Industry
The Australian Gas Association
Australian Industry Group
Bureau of Meteorology, Australia
Clean Air Society of Australia and New Zealand
CSIRO Energy Technology
Department of Environment, Heritage and Aboriginal Affairs, S.A.
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Additional interest:

Independent test laboratories

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Stationary source emissions

Part 3: Determination of odour concentration by dynamic olfactometry

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EV-007, Methods for Examination of Air.

The Standard is based on a CEN pre-draft of the same title, produced by CEN/TC 264, Air Quality, Working Group 2, Odours. The quality criteria were validated in an interlaboratory comparison for olfactometry in 1996.

Area source sampling is not covered in this Standard as it is considered such an important area, that it warrants a future Standard in its own right. AS 4323.1, *Stationary source emissions, Part 1: Selection of sampling positions* should be referenced when sampling for odour from stacks or flues.

The objective of this Standard is to provide a method for the determination of the odour concentration of a gaseous sample using dynamic olfactometry with a panel of human assessors being the sensors.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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1 SCOPE

This Standard specifies a method for the measurement of odour concentration of pure substances, defined and undefined mixtures of gaseous odorants in air or nitrogen, using dynamic olfactometry with a panel of human assessors being the sensors. The unit of measurement is the odour unit ou. The odour concentration is measured by determining the dilution factor required to reach the detection threshold. The odour concentration at the detection threshold is by definition 1 ou. The odour concentration is then expressed in terms of multiples of the detection threshold. The range of measurement is typically from 10^1 to 10^7 ou (including pre-dilution).

The relation between emissions, dispersion, exposure and annoyance is not within the scope of this Standard.

2 APPLICATION

2.1 General

The primary application of this Standard is to provide a common basis for evaluation of odorant emissions.

2.2 Inclusions

The characterization of odour emissions requires detailed measurement of the gas velocity that shall be performed according to the relevant Standards included in the normative references (see Clause 3).

The field of application includes the following:

(a) The measurement of the mass concentration at the detection threshold of pure odorous substances in grams per cubic metre.

(b) The measurement of the odour concentration of mixtures of odorants in odour units (ou).

(c) The measurement of the emission rate of odorous emissions from point sources and surface sources (with and without an outward flow), including pre-dilution during sampling.

(d) The sampling of odorants from emissions of high humidity and temperature (up to 200°C).

(e) The determination of effectiveness of end-of-pipe devices used to reduce odour emissions.

2.3 Exclusions

The field of application does not include:

(a) The measurement of odours potentially released by particles of odorous solids or droplets of odorous fluids suspended in emissions.