AS ISO 16900.4:2015
ISO 16900-4:2011

AS ISO 16900.4:2015

Respiratory protective devices—Methods of test and test equipment

Part 4: Determination of gas filter capacity and migration, desorption and carbon monoxide dynamic testing

This Australian Standard® was prepared by Committee SF-010, Occupational Respiratory Protection. It was approved on behalf of the Council of Standards Australia on 6 May 2015. This Standard was published on 30 June 2015.

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- Association of Accredited Certification Bodies
- Australasian Fire and Emergency Service Authorities Council
- Australian Chamber of Commerce and Industry
- Australian Council of Trade Unions
- Australian Industry Group
- Australian Institute of Occupational Hygienists
- Certification Interests, Australia
- Composites Australia
- Department of Defence (Australian Government)
- Department of Trade and Investment, NSW
- TestSafe Australia
- WorkSafe Victoria

This Standard was issued in draft form for comment as DR AS/NZS ISO 16900.4:2015.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard®

Respiratory protective devices—Methods of test and test equipment

Part 4: Determination of gas filter capacity and migration, desorption and carbon monoxide dynamic testing

Originally as part of AS Z18—1963.
Previous edition part of AS/NZS 1716:2012.
Revised in part and redesignated as AS ISO 16900.4:2015.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 76035 123 6

PREFACE

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee SF-010, Occupational Respiratory Protection, to ultimately supersede (in part) AS/NZS 1716:2012, *Respiratory protective devices*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

It is the Committee's intention that AS/NZS 1716:2012 will not superseded until all relevant test methods and requirements covering respiratory protective devices are published by ISO and adopted as Australian or Australian/New Zealand Standards.

A period of time (to be determined at a later date) will be allowed for manufacturers, regulators and end users to test, assess and obtain appropriate products and programs before AS/NZS 1716:2012 is then withdrawn.

The objective of this Standard is to provide test methods for determining the gas capacity of separate or integral gas filters and combined filters for respiratory protective devices as well as carbon monoxide dynamic testing.

This Standard is identical with, and has been reproduced from ISO 16900-4:2011, *Respiratory protective devices—Methods of test and test equipment*, Part 4: *Determination of gas filter capacity and migration, desorption and carbon monoxide dynamic testing*.

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text 'this part of ISO 16900' should read 'this Australian Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO 16972	Respiratory protective devices—Terms, definitions, graphical symbols and units of measurement	AS ISO 16972	Respiratory protective devices—Terms, definitions, graphical symbols and units of measurement

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

CONTENTS

INTRODUCTION

This part of ISO 16900 is intended as a supplement to the specific performance standards for respiratory protective devices. Test methods are specified for complete devices or parts of devices. If deviations from the test method given in this International Standard are necessary, these deviations will be specified in the relevant performance standard.

AUSTRALIAN STANDARD

Respiratory protective devices—Methods of test and test equipment

Part 4:
Determination of gas filter capacity and migration, desorption and carbon monoxide dynamic testing

1 Scope

This part of ISO 16900 specifies the test method for determining the gas capacity of separate or integral gas filters and combined filters for respiratory protective devices. It includes the validation test at specified flow rates, a desorption test to access the ability of the filter to retain the adsorbed or absorbed gas, and carbon monoxide dynamic testing.

NOTE These tests are conducted in laboratories using specified test agents under specified conditions and therefore do not indicate the performance of the device in actual use.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16972, *Respiratory protective devices — Terms, definitions, graphical symbols and units of measurement*

ISO/TS 21748, *Guidance for the use of repeatability, reproducibility and trueness estimates in measurement uncertainty estimation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16972 and the following apply.

3.1
sorption
process in which one substance (the filter medium) takes up or holds another (the test gas), either by adsorption or absorption

3.2
desorption
process in which one substance (the filter medium) releases an absorbed or adsorbed substance

3.3
breakthrough time
time taken from the start of the test until the test gas and specified reaction products are detected at the specified breakthrough concentration at the downstream side of the filter under test

3.4
gas filter capacity
mass or volume of a specific test agent that is removed or retained by a gas filter or combined filter under specified conditions of temperature, humidity, challenge test gas concentration and flow rate

