AS/NZS 2161.10.3:2005
EN 374-3:2003
Reconfirmed 2016

AS/NZS 2161.10.3:2005

Australian/New Zealand Standard™

Occupational protective gloves

Part 10.3: Protective gloves against chemicals and micro-organisms—Determination of resistance to permeation by chemicals

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-023, Occupational Protective Gloves. It was approved on behalf of the Council of Standards Australia on 9 March 2005 and on behalf of the Council of Standards New Zealand on 18 March 2005.
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The following are represented on Committee SF-023:

Association of Accredited Certification Bodies
Australasian Fire Authorities Council
Australian Chamber of Commerce and Industry
Department of Consumer & Employment Protection, Worksafe Division (WA)
Griffith University
Telstra Corporation Limited
University of New South Wales
United Firefighters Union of Australia
University of Otago, New Zealand
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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 04544.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF

AS/NZS 2161.10.3:2005

Occupational protective gloves

Part 10.3: Protective gloves against chemicals and micro-organisms—Determination of resistance to permeation by chemicals

RECONFIRMATION NOTICE

Technical Committee SF-023 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

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The following are represented on Technical Committee SF-023:

Australian Chamber of Commerce and Industry
Certification Interests (Australia)
Griffith University
National Safety Council of Australia
Safety Institute of Australia
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NOTES

Australian/New Zealand Standard™

Occupational protective gloves

Part 10.3: Protective gloves against chemicals and micro-organisms—Determination of resistance to permeation by chemicals

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-023, Occupational Protective Gloves. to supersede AS/NZS 2161.10.3:2002.

The objective of this Standard is to provide users and manufacturers with a method for testing gloves to determine resistance to permeation by non-gaseous chemicals under conditions of continuous contact. The objective of this revision is to adopt the current edition of EN 373-3.

This Standard is identical with and has been reproduced from the European (CEN) Standard EN 374-3:2003, *Protective gloves against chemicals and micro-organisms*, Part 3: *Determination of resistance to permeation by chemicals*.

The Committee considered that the issue of recording uncertainty in measurement is not addressed in this Standard. Users are encouraged to refer to '*Guide to the Expression of Uncertainty in Measurement*' issued by BIPM, IEC, IFCC, ISO, IUPAC, IUPAPA and OIML.

Guidance for the selection, care and use of occupational protective gloves is not covered by this Standard but is provided in AS/NZS 2161.1, *Occupational protective gloves,* Part 1: *Selection, use and maintenance*.

The Committee noted that there was no advice on the effect of different cells on chemical permeation result or advice on mixtures of chemical and commonly-occurring pesticides may affect results. Such advice is intended to be included in the next version of AS/NZS 2161.1.

As this Standard is reproduced from a European Standard, the following applies:

(a) Its number appears on the cover and title page while the European Standard number appears only on the cover.

(b) In the source text 'this European Standard' should read 'this Australian/New Zealand Standard'.

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

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

Reference to International Standard or other publication		*Joint Australian/New Zealand Standard*	
EN		AS/NZS	
374	Protective gloves against chemicals and micro-organisms	2161	Occupational protective gloves
374-1	Part 1: Terminology and performance requirements	2161.10.1	Part 10.1: Protective gloves against chemicals and micro-organisms—Terminology and performance requirements
ISO			
4648	Rubber, vulcanised or thermoplastic—Determination of dimensions of test pieces and products for test purposes	—	

This Standard is Part 10.3 of the following series:

AS/NZS		
2161	Occupational protective gloves	
2161.10.1	Part 10.1:	Protective gloves against chemicals and micro-organisms—Terminology and performance requirements
2161.10.2	Part 10.2:	Protective gloves against chemicals and micro-organisms—Determination of resistance to penetration
2161.10.3	Part 10.3	Protective gloves against chemicals and micro-organisms—Determination of resistance to permeation by chemicals

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

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Protective gloves against chemicals and micro-organisms—Determination of resistance to permeation by chemicals

Introduction

A simple flow-through, two-compartment permeation cell, of standard dimensions, is used to measure quantitatively the permeation of chemicals through protective glove materials. Breakthrough time is measured and used as a measure of protection.

1 Scope

This European Standard specifies the determination of the resistance of protective glove materials to permeation by potentially hazardous non-gaseous chemicals under the condition of continuous contact.

It is emphasised that the test does not represent conditions likely to be found in service, and the use of test data should be restricted to comparing materials chiefly on a relative basis in broad categories of breakthrough times.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate place in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 374-1, *Protective gloves against chemicals and micro-organisms — Part 1: Terminology and performance requirements.*

ISO 4648, *Rubber, vulcanised or thermoplastic — Determination of dimensions of test pieces and products for test purposes.*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions in EN 374-1 apply with the following terms and definitions:

3.1
collecting medium
a medium in which the test chemical is freely soluble to saturation mass or volume fraction greater than 0,5 %

3.2
delay time
time between actual arrival of the test chemical on the collecting side of the specimen and the time when the analytical instrumentation responds to it

3.3
permeation rate
the mass of test chemical permeating the glove per unit area per unit time (in $\mu g\ cm^{-2}\ min^{-1}$)

3.4
closed loop
breakthrough detection system in which the collecting medium is re-circulated through the sampling compartments of the test cell. Closed loop systems are not used with gaseous collection media