

Australian/New Zealand Standard™

**Occupational protective gloves  
Part 10.1: Protective gloves against  
chemicals and micro-organisms—  
Terminology and performance  
requirements**

[CEN title: Protective gloves against chemicals and micro-organisms,  
Part 1: Terminology and performance requirements]

## **AS/NZS 2161.10.1:2002**

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 14 July 2002 and on behalf of the Council of Standards New Zealand on 27 June 2002. It was published on 23 August 2002.

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-023, Occupational Protective Gloves.

This Standard is identical with and has been reproduced from the European (CEN) Standard EN 374-1:1994, *Protective gloves against chemicals and micro-organisms*, Part 1: *Terminology and performance requirements*.

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:

<i>Reference to International Standard or other publication</i>	<i>Australian/New Zealand Standard</i>
EN	AS/NZS
374 Protective gloves against chemicals and micro-organisms	2161 Occupational protective gloves
374-2 Part 2: Determination of resistance to penetration	2161.10.2 Part 10.2: Protective gloves against chemicals and micro-organisms—Determination of resistance to penetration
374-3 Part 3: Determination of resistance to penetration by chemicals	2161.10.3 Part 10.3: Protective gloves against chemicals and micro-organisms—Determination of resistance to permeation by chemicals
388 Protective gloves against mechanical risks	2161.3 Part 3: Protection against mechanical risks
407 Protective gloves against thermal hazards (heat and/or fire)	2161.4 Part 4: Protection against thermal risks (heat and fire)
420 General requirements for gloves	2161.2 Part 2: General requirements
421 Protective gloves against ionizing radiation and radioactive contamination	2161.8 Part 8: Protection against ionizing radiation and radioactive contamination
ISO	
2859 Sampling procedure for inspection by attributes	1199 Sampling procedure and tables for inspection by attributes

The objective of Part 10.1 of AS/NZS 2161 is to provide users and manufacturers with a common terminology and a set of performance requirements for gloves intended to be used against chemicals and biological contaminants.

For the purpose of this Standard, the EN text should be corrected as follows:

In Clause 3.2, 'when tested according to Clause 5.2', should read 'when tested according to Clause 5.1'.

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

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NOTES

## AUSTRALIAN/NEW ZEALAND STANDARD

**Occupational protective gloves**

## Part 10.1:

## Protective gloves against chemicals and micro-organisms—Terminology and performance requirements

**1 Scope**

This standard specifies the requirements for gloves to protect the user against chemicals and/or micro-organisms and defines terms to be used.

This standard shall be used in conjunction with EN 420.

This standard does not specify requirements for protection against any mechanical hazards. However, there is a requirement for data to be reported on the following mechanical tests: Abrasion, blade cut, tearing resistance and puncture according to the test methods described in EN 388:1993, clauses 6.1, 6.2, 6.3 and 6.4 respectively.

This standard does not specify any requirements for protection against thermal or ionizing radiation hazards. If the use requires these types of protection, reference should be made to EN 407 and EN 421 respectively.

**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.

EN 374-2, *Protective gloves against chemicals and micro-organisms — Part 2: Determination of resistance to penetration.*

EN 374-3, *Protective gloves against chemicals and micro-organisms — Part 3: Determination of resistance to penetration by chemicals.*

EN 388, *Protective gloves against mechanical risks.*

EN 407, *Protective gloves against thermal hazards (heat and/or fire).*

EN 420, *General requirements for gloves.*

EN 421, *Protective gloves against ionizing radiation and radioactive contamination.*

ISO 2859, *Sampling procedure for inspection by attribute.*

**3 Definitions**

For the purposes of this standard, the following definitions apply:

**3.1****protective glove material**

any material or combination of materials used in a glove for the purpose of isolating the hands and arms from direct contact with a chemical and/or micro-organism

**3.2****protective gloves against micro-organisms**

at this time it is believed that gloves which resist penetration, when tested according to clause 5.2, form an effective barrier to microbiological hazards

**3.3****degradation**

a deleterious change in one or more mechanical properties of a protective glove material due to contact with a chemical

**3.4****penetration**

the movement of a chemical and/or micro-organism through porous materials, seams, pinholes, or other imperfections in a protective glove material on a nonmolecular level

**3.5****permeation**

the process by which a chemical moves through a protective glove material on a molecular level.

Permeation involves the following:

- absorption of molecules of the chemical into the contacted (outside) surface of a material;
- diffusion of the absorbed molecules in the material;
- desorption of the molecules from the opposite (inside) surface of the material.

**3.6****test chemical**

test chemical can be single or multicomponent

**3.7****breakthrough time**

the elapsed time between the initial application of a test chemical to the outside surface of a protective glove material and its subsequent presence on the other side of the material, measured as described in this standard

**3.8****permeation rate**

the mass of test chemical permeating the glove per unit time per unit area