

ICS 13.340.40

CCS C73



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 28881-2023

Replacing GB 28881-2012

**Hand protection - Protective gloves against chemicals and
micro-organisms**

手部防护 化学品及微生物防护手套

Issued on: December 28, 2023

Implemented on: January 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	Technical requirements
4.1	Protective gloves against chemicals
4.1.4	Permeation resistance performance
4.2	Protective gloves against micro-organisms
5	Test methods
6	Marks
6.1	Protective gloves against chemicals
6.2	Protective gloves against micro-organisms
7	Information provided by manufacturer
	Annex A

Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020 "Directives for standardization - Part

1.Rules for the structure and drafting of standardizing documents". This document replaces GB 28881-2012 "Hand protection - Protective gloves against chemicals and micro-organisms". Compared with GB 28881-2012, in addition to structural adjustments and editorial changes, the main technical changes are as follows: - Changed the scope (see Chapter 1 of this Edition; Chapter 1 of Edition 2012); - Changed some terms and definitions (see Chapter 3 of this Edition; Chapter 3 of Edition 2012); - Deleted the general provisions (see

4.1 of Edition 2012); - Added the technical requirements and classification of protective gloves against chemicals (see

4.1 of this Edition); - Added the general protection requirements that should comply with the provisions of GB 42298-2022 (see 4.1.2,

4.2.2 of this Edition); - Changed the technical requirements for permeation resistance performance (see

4.1.4 of this Edition;

4.3.2 of Edition 2012); - Added nitric acid, acetic acid, ammonium hydroxide, hydrogen peroxide, hydrofluoric acid, formaldehyde and other permeation resistance performance test chemicals (see Table 1 of this Edition); - Changed the technical requirements for mechanical properties (see 4.1.5,

4.2.4 of this Edition;

4.4 of Edition 2012); - Changed the table of wear resistance, cut resistance, tear resistance and puncture resistance in mechanical properties (see Table 3 of this Edition; see Table 3, Table 4, Table 5, Table 6 of Edition 2012); - Deleted the ergonomic requirements (see

4.2 of Edition 2012); - Added the technical requirements for protective gloves against micro-organisms (see

4.2 of this Edition); - Deleted the test methods for hand and glove size and dexterity (see

5.2 of Edition 2012); - Added the test methods for general protection requirements (see

5.1 of this Edition); - Added additional sampling requirements in the permeation resistance performance test method (see

5.3 and Figure 1 of this Edition); - Changed the test methods for mechanical properties (see

1 Scope

GB 28881-2023 is the Chinese national standard on hand protection - protective gloves against chemicals and micro-organisms, in the field of environment and health protection, safety. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 28 December 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2025. Classification: ICS 13.340.40, CCS C73. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document defines terms and definitions for protective gloves against chemicals and micro-organisms, specifies technical requirements, labeling and information to be provided by the manufacturer, and describes test methods. This document applies to gloves for protective gloves against chemical and micro- organism hazards.

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.

GB/T 23462-2009, Protective clothing -- Test method for chemical protective materials to permeation by chemicals

GB 24541-2022, Hand protection -- Protective gloves against mechanical risks

GB 42298-2022, Hand protection -- General technical specifications

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 protective gloves against chemicals Gloves that protect the wearer's hands from chemicals.

3.2 protective gloves against micro-organisms Protective gloves that can form an effective barrier against all types of microorganisms, excluding viruses, thereby preventing their penetration.

3.3 degradation Contact with chemicals may cause destructive changes in one or more of the properties of protective gloves. NOTE. Including peeling, expansion, fragmentation, embrittlement, fading, deformation, hardening and softening.

3.4 penetration The process by which chemicals and/or microorganisms penetrate protective gloves at a non-molecular level through defects such as pores, seams, pinholes, etc. in the protective glove material.

3.5 permeation The process by which chemical molecules are adsorbed by the protective glove material, diffuse within the material, and precipitate from the other side of the material.

3.6 test chemicals Chemicals or chemical mixtures used to determine the permeation properties of protective glove materials under laboratory conditions.

3.7 normalized breakthrough time The time from the start of the test until the chemical permeation rate (permeation amount) reaches the standard permeation rate (permeation amount).

4.1 Protective gloves against chemicals

4.1.1 General Protective gloves against chemicals should meet the technical requirements of general protection requirements (4.1.2), penetration resistance (4.1.3), permeation resistance (4.1.4) and mechanical properties (4.1.5). Protective gloves against chemicals are divided into Type A, Type B and Type C according to the number of test chemicals and the level of permeation resistance performance of each test chemical.

4.1.2 General protection requirements Protective gloves against chemicals should comply

with the requirements of Chapter 5 of GB 42298-2022 according to the grade and applicability of the product.

4.1.3 Penetration resistance performance When the protective gloves against chemicals are tested according to the method specified in 5.2, no leakage should occur.

4.1.4 Permeation resistance performance

4.1.4.1 Type A protective gloves against chemicals Type A protective gloves against chemicals should be tested with the 6 test chemicals listed in Table 1 based on the information provided by the manufacturer. The test should be carried out according to the method specified in 5.3. The permeation resistance performance level of each test chemical should not be less than Level 2 in Table 2.

4.1.4.2 Type B protective gloves against chemicals Type B protective gloves against chemicals should be tested with the 3 test chemicals listed in Table 1 based on the information provided by the manufacturer. The test should be carried out according to the method specified in 5.3. The permeation resistance performance level of each test chemical should not be less than Level 2 in Table 2.

4.1.4.3 Type C protective gloves against chemicals Type C protective gloves against chemicals shall be tested with 1 of the test chemicals listed in Table 1 based on the information provided by the manufacturer. The test shall be carried out in accordance with the method specified in 5.3. The permeation resistance level of each test chemical shall not be less than Level 1 in Table 2.

4.1.5 Mechanical properties Protective gloves against chemicals are tested according to the method specified in

5.4 based on the mechanical property level of the product. At least one of the abrasion resistance, cut resistance (disc knife test method), tear resistance and puncture resistance should reach level 1 listed in Table 3.

4.2 Protective gloves against micro-organisms

4.2.1 General Protective gloves against micro-organisms should meet the general protection requirements (4.2.2), penetration resistance (4.2.3) and mechanical properties (4.2.4) requirements.

4.2.2 General protection requirements Protective gloves against micro-organisms should comply with the requirements of Chapter 5 of GB 42298-2022 according to the level and applicability of the product.

4.2.3 Penetration resistance performance When the microbial protective gloves are tested according to the method specified in 5.2, no leakage should occur.