भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDRADS

Draft For Comments Only

भारतीय मानक मसौदा

बांह और हाथ की सुरक्षा के लिए भाग 5 खतरनाक रसायन और सूक्ष्मजीव से सुरक्षा के लिये रक्षात्मक दस्ताने - शब्दावली और सूक्ष्मजीव जोखिमों के लिए आवश्यक विशिष्ट गुण

[आई एस 6994 (Part 5) *का पहला पुनरीक्षण]*

Draft Indian Standard

Protection of Arms and Hands Part 5 Protective Gloves against Dangerous Chemicals and Micro-Organisms — Terminology and Performance Requirements for Micro-Organisms Risks

[First Revision of IS 6994 (Part 5)*]*

ICS : 13.340.40

Textiles Protective Clothing Sectional Committee, TXD 32	Last date for receipt of comments is 03 September 2025

NATIONAL FOREWORD
(*Formal clauses will be added later*)

This Indian Standard intended to be adopted is identical with ISO 374-5 : 2024 'Protective gloves against dangerous chemicals and micro-organisms Part 5: Terminology and performance requirements for micro-organisms risks' issued by the International Organization for Standardization (ISO).

This standard was originally published in 2021. The present revision has been undertaken to align it with the latest version of ISO 374-5 : 2024.

This Indian Standard is published in several parts. The other parts in this series are:

Part 1: Terminology and performance requirements for chemical risks

Part 2 Protective gloves against dangerous chemicals and micro-organism — Determination of Resistance to penetration

Part 4 Protective gloves against dangerous chemicals and micro-organism — Determination of Resistance to degradation by chemicals

Part 6 Protective gloves against mechanical risks

Part 7 Protective gloves — General requirements and test methods

Part 8 Protective gloves for pesticide operators and re-entry workers — Performance Requirements

Part 9 Protective Clothing Gloves and arm guards protecting against cuts and stabs by hand knives — Chain-mail gloves and arm guards

Part 10 Protective clothing — Gloves and arm guards protecting against cuts and stabs by hand knives — Gloves and arm guards made of material other than chain mail

Part 11 Protective clothing — Gloves and arm guards protecting against cuts and stabs by hand knives — Impact Cut test for fabric, leather and other materials

Part 12 Protective clothing for users of hand-held chainsaws — Performance requirements and test Methods for protective gloves

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In the standard intended to be adopted, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
EN 374-2 Protective gloves against dangerous chemicals and micro-organisms — Part 2: Determination of resistance to penetration	IS 6994 (Part 2) : 2021 Protection of arms and hands: Part 2 Protective gloves against dangerous chemicals and micro-organisms — Determination of resistance to penetration	Identical
ISO 16604 Clothing for protection against contact with blood	IS 16545 : 2016 Clothing for protection against contact with blood and body fluids — Determination of resistance of	Identical

and body fluids — Determination of resistance of protective clothing materials to penetration by blood borne pathogens — Test method using Phi-X 174 bacteriophage	protective clothing materials to penetration by blood — Borne pathogens — Test method using phi - X174 bacteriophage	
ISO 7000 Graphical symbols for use on equipment — Registered symbols	IS 16450 : 2023 Graphical Symbols for Use on Equipment — Registered Symbols (*first revision*)	Identical

The technical committee has reviewed the provisions of the following International Standard referred in this standard intended to be adopted and has decided that these are acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO 21420	Protective gloves — General requirements and test methods

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Extract of ISO 374-5 : 2024 'Protective gloves against dangerous chemicals and micro-organisms — Part 5: Terminology and performance requirements for micro-organisms risks'

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any

claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 94, *Personal safety — Personal protective equipment*, Subcommittee SC 13 *Protective clothing,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 162, *Protective clothing including hand and arm protection and lifejackets,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 374-5:2016), which has been technically revised.

The main changes are as follows:

- — reference to ISO 21420:2020+Amd 1:2022 has been added;
- — new possible marking has been added, see Clause 6.
- — a new subclause, 5.2 Dexterity, has been added;
- — Table 1 has been updated;
- — in Clause 7, clarification for single use gloves has been given.

A list of all parts in the ISO 374 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

1 Scope

This document specifies the requirements and test methods for protective gloves intended to protect the user against micro-organisms.

NOTE If other protection features are needed, e.g. chemical risks, mechanical risks, thermal risks, electrostatic dissipation etc., the appropriate specific performance standard is used in addition. Further information on protective gloves standards can be found in the ISO 21420:2020+Amd 1:2022

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 374-2:2019, *Protective gloves against dangerous chemicals and micro-organisms — Part 2: Determination of resistance to penetration*
- ISO 7000:2019, *Graphical symbols for use on equipment — Registered symbols*
- ISO 16604:2004, *Clothing for protection against contact with blood and body fluids — Determination of resistance of protective clothing materials to penetration by blood-borne pathogens — Test method using Phi-X 174 bacteriophage*
- ISO 21420:2020+Amd1:2022, *Protective gloves — General requirements and test methods*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- — ISO Online browsing platform: available at https://www.iso.org/obp
- — IEC Electropedia: available at https://www.electropedia.org/

3.1
bacteria
very large group of micro-organisms comprising one of the three domains of living organisms, they are prokaryotic, unicellular, and either free-living in soil or water or parasites of plants or animals

3.2
protective gloves against micro-organisms
protective gloves which form a protective barrier to microbiological agents
Note 1 to entry: Microbiological agents are bacteria or viruses or fungi.

3.3
viruses
any of various simple sub-microscopic parasites of plants, animals, and *bacteria* (3.1) that often cause disease and that consist essentially of a core of RNA or DNA surrounded by a protein coat
Note 1 to entry: Unable to replicate without a host cell, viruses are typically not considered living organisms.

3.4
fungi
any of numerous eukaryotic organisms of the kingdom Fungi, which lack chlorophyll and vascular tissue and range in form from a single cell to a body mass of branched filamentous hyphae that often produce specialized fruiting bodies
Note 1 to entry: The kingdom includes the yeasts, moulds and smuts.

FORMAT FOR SENDING COMMENTS ON BIS DOCUMENTS

(Please use A4 size sheet of paper only and type within fields indicated. Comments on each clause/sub clause/table/fig etc. be started on a fresh box. Information in column 3 should include reasons for the comments and suggestions for modified working of the clauses when the existing text is found not acceptable. Adherence to this format facilitates Secretariat's work)

Please e-mail your comments to txd@bis.gov.in

NAME OF THE COMMENTATOR/ORGANIZATION:

DOCUMENT NO: TXD 32 (28462) WC

BIS LETTER REFERENCE NO. : TXD 32 (28462)

Item, Clause Sub-Clause No. Commented upon (Use Separate Box afresh)	**Comments**	**Specific Proposal (Draft clause to be add/amended)**	**Remarks**	**Technical References and justification on which (2), (3), (4) are based**
(1)	**(2)**	**(3)**	**(4)**	**(5)**