

BUREAU OF INDIAN STANDARDS

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Draft Indian Standard

**Measurement of radioactivity — Gamma ray and beta emitting radionuclides — Test method
to assess the ease of decontamination of surface materials**

(ICS 13.280)

Nuclear Energy for Peaceful Applications
Sectional Committee, CHD 30

Last Date for Comments: 04 April 2025

NATIONAL FOREWORD

(Formal clauses to be added later)

Wherever radioactivity is used, there is always a risk of surface contamination from contact with radioactive materials in solution or airborne radioactivity. To mitigate the risk of accidental ingestion by staff, it is typically necessary to remove this contamination. The ease with which surface materials can be decontaminated is a critical factor when selecting materials, especially in environments such as nuclear industry facilities, radionuclide laboratories, or nuclear medicine settings.

This standard defines a quantitative method under objective conditions for testing the ease of decontamination of surface materials. The method facilitates comparison of different materials, assisting in the selection of the most suitable one for various applications.

For the test, radioactive solutions are deposited onto a sample of the material being studied. The solutions contain radionuclides commonly found in the nuclear industry (^{60}Co , ^{137}Cs or ^{134}Cs) and are in aqueous form. The surface is then cleaned and the residual activity on the surface is measured to give a quantitative measure of the ease of decontamination.

Considering the benefits of aligning standard with that of international standards, the Committee decided to prepare this standard by identical adoption of ISO 8690: 2024 'Measurement of radioactivity — Gamma ray and beta emitting radionuclides — Test method to assess the ease of decontamination of surface materials' under dual numbering.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions and terminologies 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 in the International Standard, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

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

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 15 Rolling bearings — Radial bearings — Boundary dimensions, general plan	IS 5669: 2019/ ISO 15: 2017 Rolling bearings -- Radial bearings -- Boundary dimensions, general plan (<i>second revision</i>)	Identical with ISO 15 : 2017
ISO 273 Fasteners — Clearance holes for bolts and screws	IS 1821: 1987/ ISO 273: 1979 Dimensions for clearance holes for bolts and screws (<i>third revision</i>)	Identical with ISO 273: 1979
ISO 2009 Slotted countersunk flat head screws — Product grade A	IS 1365: 2022/ ISO 2009: 2011 Slotted countersunk flat head screws Product grade A (<i>fifth revision</i>)	Identical with ISO 2009: 2011
ISO 2010 Slotted raised countersunk head screws — Product grade A	IS 8911 : 2018/ ISO 2010 : 2011 Slotted raised countersunk head screws - Product grade A (<i>second revision</i>)	Identical with ISO 2010: 2011
ISO 3819 Laboratory glassware — Beakers	IS 2619: 2018/ ISO 3819: 2015 Glass Beakers — Specification (<i>third revision</i>)	Identical with ISO 3819: 2015
ISO 4762 Hexagon socket head cap screws	IS 2269: 2006/ ISO 4762: 2004 Hexagon socket head cap screws (<i>fifth revision</i>)	Identical with ISO 4762: 2004
ISO 80000-10 Quantities and units — Part 10: Atomic and nuclear physics	IS/ISO 80000-10 : 2019 Quantities and units Part 10 : Atomic and nuclear physics	Identical with ISO 80000-10 : 2019

In this adopted standard, the reference appears to certain International Standards for which Indian Standards do not exist. So, the technical committee has reviewed the provisions of the following International Standards/ documents referred in this adopted standard and has decided that they are acceptable for use in conjunction with this Standard:

<i>International Standards</i>	<i>Title</i>
ISO/IEC Guide 98-3	Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)
ISO/IEC Guide 99	International vocabulary of metrology — Basic and general concepts and associated terms (VIM)
ISO 11074	Soil quality — Vocabulary

In this adopted standard, reference appears to certain International Standards where the standard atmospheric conditions to be observed are stipulated which are not applicable to tropical/subtropical countries. The applicable standard atmospheric conditions for Indian conditions are $(27 \pm 2) ^\circ\text{C}$ and (65 ± 5) percent relative humidity and shall be observed while using this standard.

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In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*)'.

FOR COMPLETE TEXT OF THE DOCUMENT, KINDLY REFER ISO 8690: 2024

Note: The technical content of the document has not been enclosed as these are identical with the corresponding ISO Standard. For obtaining the copy of the complete ISO Standard, please contact:

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