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

GB/T 14057-1993

Replacing GB/T 14057.1-2008

**Decontamination of radioactively contaminated surfaces - Part
1: Test method to assess the ease of decontamination
(English Translation)**

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Table of Contents

Preface
Introduction
1 Scope
2 Normative References
3 Terms and Definitions
4 Method Principles
5 Test conditions
6 Instruments and Equipment
8 Samples
9 Experimental Procedures
10 Data processing and evaluation of the ease of decontamination.
11 Test Report
Appendix A (Informative) Sample Contamination Locator
Appendix B (Normative) Cage Agitator for Decontamination
Appendix C (Informative) Calculation Formulas for Preparing Solutions Contaminated with ^{60}Co , ^{137}Cs , or ^{134}Cs
Appendix D (Informative) Calculations for Preparing Contaminated Solutions Using Neutron Activation Method
Appendix E (Informative) Test Report

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 14057 "Decontamination of Radioactively Contaminated Surfaces". GB/T 14057 has already published the following parts.

---Part 1: Test methods for evaluating the ease of decontamination;

---Part 2: Test methods for textile detergents.

This document replaces GB/T 14057.1-2008 "Decontamination of Radioactively Contaminated Surfaces - Part 1: Tests and Evaluation of Decontamination Difficulty".

Compared with GB/T 14057.1-2008, the main technical changes in the "Methods" are as

follows, except for structural adjustments and editorial modifications.

---A new chapter on "Experimental Conditions" has been added (see Chapter 5);

---Added scenarios applicable to 134Cs (see Chapters 4, 7, 10 and Appendix C);

This document is modified to adopt ISO 8690:2024 "Radiometric measurements - Evaluation of radionuclides emitting gamma rays and beta rays - Surface materials".

Test method for determining the ease of decontamination of materials.

The technical differences between this document and ISO 8690:2024, and the reasons therefor, are as follows.

---GB/T 68 replaced ISO.2009, GB/T 69 replaced ISO.2010, and GB/T 70.1 replaced [the previous standard].

ISO 4762 and GB/T 273.3 replaced ISO 15, and GB 5277 replaced ISO 273 (see Appendix B) to adapt to my country's technical standards.

Improve technical conditions and increase operability;

---ISO 3819 (see 6.1) has been replaced with the normatively referenced GB/T 15724 to adapt to my country's technical conditions and increase operability.

Actual nature;

--- Normative references ISO 11074-1, ISO 80000-10, ISO/IEC Guide 98-3, and ISO/IEC Guide 99 have been removed to better suit [the following].

Based on my country's technological conditions;

---A normative reference document GB/T 4960.8 (see Chapter 3) has been added to facilitate inter-standard application;

---A new chapter on "Experimental Conditions" (see Chapter 5) has been added to improve the completeness of the experimental methods content;

---The content regarding the use of other radionuclides has been moved to Chapter 7 (see 7.1.1.3).

The following editorial changes have been made to this document.

---The standard title has been changed to "Decontamination of Radioactively Contaminated Surfaces Part 1: Test Methods for Evaluating the Ease of Decontamination";

---Chapter 1 has been streamlined, and some explanatory content has been moved to the "Introduction";

---The dimension of the "Agitator Support" in the diagram has been revised from "150±0.1" to "160±0.1" (see Figure B.2);

---The letter "C" in the left half of the "Agitator Shaft" diagram has been changed to "D," and the dimensioning in the enlarged "DD" diagram has been improved.

(See Figure B.3);

---In the diagram of the "Upper Hexagonal Disk", "40-01" should be changed to "40-0.1" (see Figure B.6);

---Add an explanation for footnote "b" in the "Connector" diagram (see Figure B.7).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Nuclear Energy Standardization Technical Committee (SAC/TC58).

Introduction

Sites where radioactive materials are used may have radioactive surface contamination. Removing such contamination is crucial to reducing the risk of accidental inhalation by workers.

The risk of weak skin penetration from radioactive materials or contaminated textiles is critical.

GB/T 14057 "Decontamination of Radioactively Contaminated Surfaces" is proposed to consist of the following two parts.

---Part 1: Test methods for evaluating the ease of decontamination. The purpose is to define the ease of decontamination for different material surfaces.

Evaluation test methods.

---Part 2: Test methods for textile detergents. The purpose is to specify test methods for evaluating the detergency of textile detergents.

A rapid laboratory method for evaluating the decontamination ease of different surface materials (such as surface coatings, impermeable materials, etc.) under laboratory conditions.

The radioactive nuclides used in the experiment were water-soluble nuclides commonly used in the nuclear industry (^{60}Co , ^{137}Cs , or ^{134}Cs).

Due to the influence of various factors such as the type of radionuclide, chemical form, exposure time to contamination, and environmental conditions, this experimental method cannot completely [prevent/control] the spread of the virus.

This test method reflects the ease or difficulty of cleaning material surfaces under actual usage conditions. Furthermore, it is not intended to describe general cleaning procedures

or evaluate cleaning processes.

Program efficiency (see GB/T 14056 for relevant information).

Cleaning of radioactive contaminated surfaces Part 1: Test methods for evaluating the ease of decontamination

1 Scope

This document describes a method for evaluating the ease of decontamination of radioactively contaminated surfaces under laboratory conditions.

This document is applicable for evaluating the radioactive contamination of surfaces of metallic, non-metallic, various coatings, and floor covering materials for material selection purposes.

The ease of contamination is not applicable to material selection for process systems that are in prolonged contact with contaminated media under high temperature and high pressure, nor is it applicable to actual use conditions.

Evaluation of the ease of cleaning the surface of the material under the condition.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 68 Countersunk Screws (GB/T 68-2016, ISO.2009.2011, MOD) GB/T 69 Slotted Countersunk Screws (GB/T 69-2016, ISO.2010.2011, MOD) GB/T 70.1 Socket head cap screws (GB/T 70.1-2008, ISO 4762:2004, MOD) 2017, IDT) GB/T 4960.8 Nuclear Science and Technology Terminology Part 8: Radioactive Waste Management GB 5277 Fasteners - Bolts and screws with through holes (GB 5277-1985, ISO 273:1979, NEQ) GB/T 15724 Laboratory glassware beakers (GB/T 15724-2008, ISO 3819:2015, MOD)

3 Terms and Definitions

The terms and definitions defined in GB/T 4960.8 and the following terms and definitions apply to this document.

Specific pulserate

The count rate, measured by a measuring instrument on 1 mL of contaminated solution under given geometric conditions, and corrected for dead time and background.