SLOVENSKI STANDARD
SIST EN ISO 16638-2:2022

01-september-2022

Radiološka zaščita - Nadzorovanje in notranja dozimetrija za posebne materiale - 2. del: Zaužitje uranovih spojin (ISO 16638-2:2019)

Radiological protection - Monitoring and internal dosimetry for specific materials - Part 2: Ingestion of uranium compounds (ISO 16638-2:2019)

Strahlenschutz - Überwachung und interne Dosimetrie für bestimmte Stoffe - Teil 2: Ingestion von Uranverbindungen (ISO 16638-2:2019)

Radioprotection - Contrôle et dosimétrie interne des éléments spécifiques - Partie 2: Ingestion de composés d'uranium (ISO 16638-2:2019)

Ta slovenski standard je istoveten z: **EN ISO 16638-2:2022**

ICS:

17.240	Merjenje sevanja	Radiation measurements

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 16638-2

August 2022

ICS 17.240

English Version

Radiological protection - Monitoring and internal dosimetry for specific materials - Part 2: Ingestion of uranium compounds (ISO 16638-2:2019)

Radioprotection - Contrôle et dosimétrie interne des éléments spécifiques - Partie 2: Ingestion de composés d'uranium (ISO 16638-2:2019)

Strahlenschutz - Überwachung und interne Dosimetrie für bestimmte Stoffe - Teil 2: Ingestion von Uranverbindungen (ISO 16638-2:2019)

This European Standard was approved by CEN on 24 July 2022.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of ISO 16638-2:2019 has been prepared by Technical Committee ISO/TC 85 "Nuclear energy, nuclear technologies, and radiological protection" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 16638-2:2022 by Technical Committee CEN/TC 430 "Nuclear energy, nuclear technologies, and radiological protection" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2023, and conflicting national standards shall be withdrawn at the latest by February 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 16638-2:2019 has been approved by CEN as EN ISO 16638-2:2022 without any modification.

Annex G
(informative)

A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN-CENELEC national member.

This European Standard does not fall under any Directive/Regulation of the EU.

In the relevant CEN-CENELEC countries, these A-deviations are valid instead of the respective provisions of the European Standard until the national situation causing the A-deviation has changed.

Clause	Deviation
General	Germany Incorporation monitoring in Germany is legally regulated by the German Guidelines on physical radiation protection control for determination of the body dose part 2: Determination of the body dose of internal exposition (incorporation monitoring) of January 12, 2007 Regarding the measurements and the quality control described in this clauses shall comply with the guideline on physical radiation protection control for determination of the body dose part 2: Determination of the body dose of internal exposition (incorporation monitoring) of January 12, 2007
11.3	Germany Measurement uncertainties as described in this clause are legally not taken into account in Germany.

INTERNATIONAL STANDARD

ISO 16638-2

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Radiological protection — Monitoring and internal dosimetry for specific materials —

Part 2: Ingestion of uranium compounds

Radioprotection — Contrôle et dosimétrie interne des éléments spécifiques —

Partie 2: Ingestion de composés d'uranium

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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 documents 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).

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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 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 2, *Radiological protection*.

A list of all the parts in the ISO 16638 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.

Introduction

In the course of employment, individuals may work with radioactive materials that, under certain circumstances, could be taken into the body. Protecting workers against the risks of incorporated radionuclides needs monitoring for potential intakes and/or quantifying actual intakes and exposures. Internal radiation exposure caused by the contamination of radioactive substances results in doses, which cannot be measured directly. Decisions should be made regarding which methods, techniques, frequencies, etc., to select in order to measure and assess these doses. The criteria for determining the design of a monitoring programme, i.e. its requirements, methods and schedule, usually depends on legislation, the purpose of the overall radiation protection programme, the probabilities of potential radionuclide intakes and the characteristics of the materials handled.

For these reasons, four International Standards addressing monitoring programmes (ISO 20553), laboratory requirements (ISO 28218), dose assessments (ISO 27048) and special cases of inhalation of uranium compounds (ISO 16638-1) have been developed and can be applied in a straightforward manner to many radionuclides for accreditation purposes.

This document has been developed to address the specific issue of monitoring and internal dosimetry for ingestion of uranium compounds. It contributes to harmonizing the practices in the monitoring of occupationally exposed persons while remaining complementary to ISO 16638-1. Occupational intakes solely by ingestion are rare however they may need to be considered in some circumstances, for example; external contamination of the mouth or lips; in cases of poor working practices such as food being eaten in contamination areas. Intakes by ingestion can also occur alongside inhalation depending on the circumstances of the event. Monitoring and dose assessment for intakes by inhalation (ISO 16638-1) are covered in a separate document and would take precedence over the requirements for assessing intakes by ingestion. However, the monitoring requirements are very similar. Uranium is both radiologically and chemically toxic. Hence, the scientific bases of current occupational exposure standards are reviewed in addition to radiation exposure limits.

This document describes the need for a monitoring and internal dosimetry programme for the different compounds of uranium in case of a risk of ingestion and offers guidance on its design. The design of the workplace, the work practices and hygiene practices followed and the protective equipment worn, may all be essential in controlling exposure to this risk. The development of this document has taken into account recommendations from international expert bodies and persons with international experience of the practical application of its recommendations in radiological protection programmes. Its application facilitates the exchanges of information between authorities, supervisory institutions and employers.