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Radiation protection instrumentation - Equipment for measuring the activity concentration of gamma-emitting radionuclides in foodstuffs

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/21

Obsahuje: EN IEC 61563:2021, IEC 61563:2019

**132626**



EUROPEAN STANDARD

**EN IEC 61563**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2021

ICS 13.280

English Version

**Radiation protection instrumentation - Equipment for measuring  
the activity concentration of gamma-emitting radionuclides in  
foodstuffs  
(IEC 61563:2019)**

Instrumentation pour la radioprotection - Équipement de  
mesure de la concentration d'activité des radionucléides  
émetteurs gamma dans les aliments  
(IEC 61563:2019)

Strahlenschutz-Messgeräte - Einrichtungen für die Messung  
der Aktivitätskonzentration von Gammastrahlung  
emittierenden Radionukliden in Lebensmitteln  
(IEC 61563:2019)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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

**EN IEC 61563:2021 (E)****European foreword**

This document (EN IEC 61563:2021) consists of the text of IEC 61563:2019 prepared by SC 45B "Radiation protection instrumentation" of IEC/TC 45 "Nuclear instrumentation".

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-01-25
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-01-25

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60846-1	NOTE	Harmonized as EN 60846-1
IEC/TR 62461	NOTE	Harmonized as CLC IEC/TR 62461

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-395	-	International Electrotechnical Vocabulary - Part 395: Nuclear instrumentation: Physical phenomena, basic concepts, instruments, systems, equipment and detectors	-	-
IEC 60086-2	-	Primary batteries - Part 2: Physical and electrical specifications	EN 60086-2	-
IEC 60529	-	Classification of degrees of protection provided by enclosures	-	-
IEC 61187	-	Electrical and electronic measuring equipment - Documentation	EN 61187	-
IEC 62706	-	Radiation protection instrumentation - Environmental, electromagnetic and mechanical performance requirements	-	-
ISO 11929	-	Determination of the characteristic limits (decision threshold, detection limit and limits of the confidence interval) for measurements of ionizing radiation - Fundamentals and application	-	-



IEC 61563

Edition 2.0 2019-07

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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émetteurs gamma dans les aliments**



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Edition 2.0 2019-07

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Équipement de mesure de la concentration d'activité des radionucléides  
émetteurs gamma dans les aliments**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RADIATION PROTECTION INSTRUMENTATION – EQUIPMENT FOR  
MEASURING THE ACTIVITY CONCENTRATION OF GAMMA-EMITTING  
RADIONUCLIDES IN FOODSTUFFS**

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International Standard 61563 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

This second edition cancels and replaces the first edition published in 2001. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The previous edition applied to handheld-type and portable-type instruments. This edition applies to transportable-type and installed-type instruments, as well as the scope of the previous edition. The handheld-type and portable-type instruments are mainly used in case of a post accidental situation, however, the transportable-type and installed-type instruments can be used through recovery phase.
- b) Uncertainty of measurement according to GUM is introduced.
- c) Detection limit defined in ISO 11929 is introduced to specify a minimum detectable activity.

- d) Environmental requirements, mechanical requirements and electromagnetic requirements are updated according to IEC 62706.
- e) Sample format of measuring report is introduced as Annex C (informative).

The text of this International Standard is based on the following documents:

FDIS	Report on voting
45B/931/FDIS	45B/936/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## **RADIATION PROTECTION INSTRUMENTATION – EQUIPMENT FOR MEASURING THE ACTIVITY CONCENTRATION OF GAMMA-EMITTING RADIONUCLIDES IN FOODSTUFFS**

### **1 Scope**

This document applies to instruments used to measure the activity and/or activity concentration of gamma-emitting radionuclides in food and/or foodstuffs. This document applies to instruments used both as gross count type instruments and pulse height analysing type instruments used in field conditions and in measurement facilities. This document does not apply to high-resolution spectrometers that use germanium detectors.

The instruments to which this document applies can be used to measure the activity and activity concentration of gamma-emitting radionuclides for a wide variety of samples, such as soil, sewage, plant, and animal life.

The object of this document is to establish performance requirements, to provide test methods and to specify general characteristics, general test conditions, and radiological, environmental, mechanical and electromagnetic characteristics to be used to determine whether an instrument meets the requirements of this document. The test results provide information to end-users and manufacturers regarding the capability of instrument for reliable measurement of the activity and/or activity concentration of gamma-emitting radionuclides.

This document does not apply to sample preparation.

### **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.

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IEC 60086-2, *Primary batteries – Part 2: Physical and electrical specifications*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 61187, *Electrical and electronic measuring equipment – Documentation*

IEC 62706, *Radiation protection instrumentation – Environmental, electromagnetic and mechanical performance requirements*

ISO 11929, *Determination of the characteristic limits (decision threshold, detection limit and limits of the coverage interval) for measurements of ionizing radiation – Fundamentals and application*