INTERNATIONAL STANDARD

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Unsealed radioactive substances — Identification and documentation

Substances radioactives non scellées — Identification et documentation

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Foreword

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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. www.iso.org/directives

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 85, *Nuclear energy, nuclear technologies and radiological protection*, Subcommittee SC 2, *Radiological protection*.

This second edition cancels and replaces the first edition (ISO 3925:1978), which has been technically revised.

Unsealed radioactive substances — Identification and documentation

1 Scope

This International Standard establishes the requirements for the identification and documentation of unsealed radioactive substances issued commercially by suppliers and which are intended for further handling or processing, either physical or chemical.

Requirements for radiopharmaceuticals and standard sources are not covered.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 361, *Basic ionizing radiation symbol*

3 Terms and definitions

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

3.1
unsealed radioactive substance
radioactive substance placed in a container in a way enabling its further physical or chemical processing;

Note 1 to entry: The container does not meet or has not been demonstrated to meet the requirements for a sealed source as defined in ISO 2919.

3.2
radionuclidic purity
proportion of the total activity that is present in the sample as a specific radionuclide

3.3
radiochemical purity
percentage present in the sample of a given radionuclide that is in one specified chemical form

[SOURCE: ISO 921:1997]

3.4
specific activity
total activity of the sample divided by its mass

3.5
activity concentration
total activity of the sample divided by its volume

4 Identification

The container of the unsealed radioactive substance shall be durably and legibly marked with the following:

a) manufacturer's name or symbol;

b) chemical symbol, mass number of the radionuclide, and, if physically possible, the name of the chemical preparation;

c) radiation symbol in accordance with ISO 361, and if physically possible, the word “RADIOACTIVE”;

d) cross-reference to the certificate (see Clause 5).

5 Certificate

The manufacturer shall provide a certificate bearing the following information, as appropriate:

a) manufacturer’s name and address;

b) name of the preparation and chemical form, mass number and chemical symbol of the radionuclide, and, when applicable, a statement indicating the position of the radionuclide in the molecule of the compound;

c) cross-reference to the label on the container;

d) physical form of the preparation and solvent if present;

e) mass or volume of the preparation;

f) activity concentration and/or specific activity at stated time and date; when there is a mixture of radionuclides, the activity of each radionuclide at a specified time and date shall be stated;

g) activity at stated time and date;

h) radionuclidic purity;

i) radiochemical purity;

j) chemical purity or impurities;

k) acidity, alkalinity or pH;

l) date of production and expiry date;

m) special conditions of storage;

n) physical and chemical characteristics of storage container;

o) process batch identification.