Radiological protection - Sealed radioactive sources - General requirements and classification (ISO 2919:2012)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 2919:2014 sisaldab Euroopa standardi EN ISO 2919:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 2919:2014 consists of the English text of the European standard EN ISO 2919:2014.
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Foreword

The text of ISO 2919:2012 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 2919:2014 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of an identical text or by endorsement, at the latest by May 2015, and conflicting national standards shall be withdrawn at the latest by May 2015.

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Endorsement notice

The text of ISO 2919:2012 has been approved by CEN as EN ISO 2919:2014 without any modification.

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Introduction

Safety is the prime consideration when establishing standards about the use of sealed radioactive sources. Sealed-source users have established an enviable record of safe usage as a result of careful scrutiny of the conditions of application of the sealed radioactive source by the regulating authority, the supplier and the user. However, as the application of sealed radioactive sources becomes more diversified and as regulating agencies become more numerous, an International Standard is needed to specify the characteristics of a sealed radioactive source and the essential performance and safety testing methods for a particular application and, thus, maintain the record of safe usage.

Radiological protection — Sealed radioactive sources — General requirements and classification

1 Scope

This International Standard establishes a classification system for sealed radioactive sources that is based on test performance and specifies general requirements, performance tests, production tests, marking and certification. It provides a set of tests by which manufacturers of sealed radioactive sources can evaluate the safety of their products in use and users of such sources can select types which are suitable for the required application, especially where protection against the release of radioactive material, with consequent exposure to ionizing radiation, is concerned. This International Standard can also serve as guidance to regulating authorities.

The tests fall into several groups, including, for example, exposure to abnormally high and low temperatures and a variety of mechanical tests. Each test can be applied in several degrees of severity. The criterion of pass or fail depends on leakage of the contents of the sealed radioactive source.

NOTE Leakage test methods are given in ISO 9978.

Although this International Standard classifies sealed sources by a variety of tests, it does not imply that a sealed source will maintain its integrity if used continuously at the rated classification. For example, a sealed source tested for 1 h at 600 °C might, or might not, maintain its integrity if used continuously at 600 °C.

A list of the main typical applications of sealed radioactive sources, with a suggested test schedule for each application, is given in Table 3. The tests constitute minimum requirements corresponding to the applications in the broadest sense. Factors to be considered for applications in especially severe conditions are listed in 4.2.

This International Standard makes no attempt to classify the design of sources, their method of construction or their calibration in terms of the radiation emitted. Radioactive materials inside a nuclear reactor, including sealed sources and fuel elements, are not covered by this International Standard.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 361, *Basic ionizing radiation symbol*

ISO 9978:1992, *Radiation protection — Sealed radioactive sources — Leakage test methods*

3 Terms and definitions

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

3.1
capsule
protective envelope used to prevent leakage of radioactive material

3.2
device
any piece of equipment designated to utilize one or several sealed sources