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International

ISO 8690

Measurement of radioactivity — Gamma ray and beta emitting radionuclides — Test method to assess the ease of decontamination of surface materials

Mesurage de la radioactivité — Radionucléides émetteurs gamma et bêta — Méthode d'essai pour évaluer l'aptitude à la décontamination des matériaux de surface

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This document was prepared by Technical Committee ISO/TC 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 2, *Radiological protection*.

This third edition cancels and replaces the second edition (ISO 8690:2020), of which it constitutes a minor revision.

The main changes are as follows:

— symbols were corrected and clarified;

— principles were rephrased and optimized;

— Table 1 was optimized;

— figures were completed and corrected;

— editorial corrections were made.

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Wherever radioactivity is used, there is a risk that surfaces can become contaminated through contact with radioactivity in solution or airborne radioactivity. It is normally necessary to remove this surface contamination to reduce the risk to staff from accidental ingestion of the radioactivity on the surface. The ease of decontaminating surface materials is therefore an important parameter to consider when selecting materials to use, e.g. for facilities in the nuclear industry, in radionuclide laboratories or nuclear medicine facilities.

This document defines a quantitative method under objective conditions for testing the ease of decontamination of surface materials. The method enables the comparison of different surface materials to support decisions on materials to use for different applications.

For the test, radioactive solutions are deposited onto a sample of the material being studied. The solutions contain radionuclides commonly found in the nuclear industry (^{60}Co, ^{137}Cs or ^{134}Cs) and are in aqueous form. The surface is then cleaned and the residual activity on the surface is measured to give a quantitative measure of the ease of decontamination.

The results of the tests on different materials therefore help the user select the best surface material for the application being considered.

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