

ISO TC85 WG 17

"Radioactivity
measurement"

Standards under preparation by WG17

1 ISO 18589

Radioactivity in the environment: soil parts 1-7

- Published
- Method of selection of sampling strategy, shortly to be published
- Measurement of gamma emitting radionuclide's
- Measurement of Plutonium isotopes ^{238}Pu , $^{239+240}\text{Pu}$
- Measurement of ^{90}Sr
- Measurement of gross alpha and gross beta activities
- A further part of this standard is being considered

2 ISO 11929

Determination of the characteristic limits (decision threshold, detection limit, and limits of the confidence interval) for ionising radiation-fundamentals and applications

3 ISO7503

Measurement of radioactivity- Evaluation of surface contamination parts 1-3

4 ISO 8769

Reference sources for the calibration of surface contamination monitors-alpha, beta and photon emitters parts 1-2

ISO 7503 consists of the following parts, under the general title

Measurement of radioactivity — Evaluation of surface contamination:

- Part 1: Beta-emitters (maximum beta energy greater than 0,15 MeV) and alpha-emitters
- Part 2: Tritium surface contamination
- Part 3: Isomeric transition and electron capture emitters, low energy beta-emitters ($E_{\beta max} < 0,15$ MeV)

Appropriate radionuclides for reference sources:

^{14}C ($E_{bmax} = 0,15\text{MeV}$)

^{147}Pm ($E_{bmax} = 0,23\text{MeV}$)

^{36}Cl ($E_{bmax} = 0,71\text{MeV}$)

^{204}Tl ($E_{bmax} = 0,77\text{MeV}$)

$^{90}\text{Sr}/^{90}\text{Y}$ ($E_{bmax} = 2,26\text{MeV}$)

$^{106}\text{Ru}/^{106}\text{Rh}$ ($E_{bmax} = 3,54\text{ MeV}$)

^{241}Am ($E_{\alpha} = 5,39 - 5,49\text{ MeV}$)

ISO TC 85/SC2

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Secretariat; AFNOR

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ISO 7503-1

- Measurement of radioactivity- Evaluation of surface contamination
- Part-1 Beta-emitters (maximum beta energy greater than 0.15 MeV) , alpha emitters and low energy photon emitters

6.3.2 Calculation of the calibration factor for the direct evaluation of surface contamination

- The direct method calibration factor $C_{dir,j}$ for the radiation type j is calculated according to:

$$C_{dir,j} = \frac{1}{W \cdot \varepsilon_{i,j} \cdot \varepsilon_{s,j}}$$

- $C_{dir,j}$ is the direct method calibration factor for radiation type j
- W is the sensitive window area in cm^2
- $\varepsilon_{i,j}$ is the instrument efficiency for radiation type j
- $\varepsilon_{s,j}$ is the source efficiency of radiation type j
- The values for $\varepsilon_{s,j}$ given in table A.2 of Annex A as a result of plausible and conservative assumptions may be used in the absence of more precisely known values.
- The distance between the instrument and the surface shall be kept as small as practicable. Spacers may be used for this purpose.

ISO 8769

Reference sources for the calibration of surface contamination Monitors Alpha, beta and photon emitters

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