BS EN ISO 19361:2025

BSI Standards Publication

Measurement of radioactivity — Determination of beta emitters activities —Test method using liquid scintillation counting

National foreword

This British Standard is the UK implementation of EN ISO 19361:2025. It is identical to ISO 19361:2025. It supersedes BS EN ISO 19361:2020, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee NCE/2, Radiation protection and measurement.

A list of organizations represented on this committee can be obtained on request to its committee manager.

The UK committee notes the following distinctions and additional resources for user reference.

The standard notes that for specific radionuclides, samples often require chemical separation and processing before analysis. The Scope (Clause 1) provides references for ISO standards describing the procedures for a number of radionuclides (^{3}H, ^{14}C, ^{222}Rn, ^{226}Ra, ^{90}Sr). However, it should be noted that there are several other radionuclides for which there are currently ISO standards for determination by liquid scintillation counting (LSC) (^{99}Tc, ^{55}Fe, ^{63}Ni, ^{210}Pb, U isotopes). The standards relating to those radionuclides are, respectively:

- ISO 22125-1:2019, Water quality — Technetium-99 — Part 1: Test method using liquid scintillation counting
- ISO 22515:2021, Water quality — Iron-55 — Test method using liquid scintillation counting
- ISO 23655-1:2022, Water quality — Nickel-59 and nickel-63 — Part 1: Test method using liquid scintillation counting
- ISO 13163:2021, Water quality — Lead-210 — Test method using liquid scintillation counting
- ISO 13169:2018, Water quality — Uranium — Test method using alpha liquid scintillation counting.

The description of the preparation of blank materials in Subclause 8.1 describes the use of a reference material as a blank matrix prepared with reference material of the lowest activity available. The UK committee recommends using a reference material that is certified as a blank. In most cases the blank sample is better prepared from a sample of the test sample matrix which does not contain any enhanced radioactivity. For solid samples, this is likely to be an unused filter or planchet.

Clause 9 provides formulas for the calculation of results, uncertainties, limits of detection etc. for samples that are counted directly. Where processing or chemical separation has taken place, the formulas for these calculations can be found in the nuclide-specific standards described above.

Contractual and legal considerations