

205.4 - Radioactive Solutions

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["Radionuclide Calibration Services"](#)

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["Radioactive SRMs General Info"](#)

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

| SRM | Description | Unit of Issue | Approx. Massic Activity (Bq/g) | Chemical Form | Decay Modes | NRC License or Equivalent Required* | Reference Time (month/year) |
|-------|---|---------------|--------------------------------|---|-------------|-------------------------------------|-----------------------------|
| 4222d | Carbon-14-n-hexadecane Radioactivity Standard | 5 mL | 54,000 | n-hexadecane | β- | -- | 09/14 |
| 4226D | Nickel-63 Radioactivity Standard | 5 mL | 85 000 | NiCl ₂ | β- | X | 11/09 |
| 4233f | Cesium-137 Radioactivity Standard | 5 mL | 221 100 | CsCl | β,γ | X | 08/18 |
| 4239 | Strontium-90 Radioactivity Standard Solution | 5 mL | 32 000 | SrCl ₂ | β - | X | 12/06 |
| 4251d | Barium-133 Radioactivity Standard | 5 mL | 382 600 | BaCl ₂ | EC | X | 07/18 |
| 4274 | Holmium-166m Gamma-ray Emission Rate Standard | 5 mL | 20 000 | HoCl ₃ | γ | X | 02/06 |
| 4288B | Technetium-99 Radioactivity Standard | 5 mL | 30 000 | KTcO ₄ | β - | -- | 05/08 |
| 4320b | Curium-244 Radioactivity Standard | 5 mL | 35 | Cm(NO ₃) ₃ | α | X | 09/11 |
| 4321d | Natural Uranium Radioactivity Standard | 5 mL | 250 | UO ₂ (NO ₃) ₂ | α | X | 03/17 |
| 4322d | Americium-241 Radioactivity Standard | 5 mL | 134 | Am(NO ₃) ₃ | α | X | 3/19 |
| 4323c | Plutonium-238 Radioactivity Standard | 5 mL | 23 | Pu(NO ₃) ₆ | α | X | 10/16 |
| 4324B | Uranium-232 Radioactivity Standard Solution | 5 mL | 30 | UO ₂ (NO ₃) ₂ | α | X | 7/02 |
| 4326a | Polonium-209 Radioactivity Standard | 5 mL | 39** | PoCl ₄ | α, EC | X | 12/13 |
| 4328C | Thorium-229 Radioactivity Standard | 5 mL | 35 | Th(NO ₃) ₄ | α | X | 12/07 |
| 4329a | Curium-243 Radioactivity Standard | 5 mL | 31 | Cm(NO ₃) ₃ | α | X | 05/19 |
| 4330C | Plutonium-239 Radioactivity Standard | 3 mL | 40 | Pu(NO ₃) ₆ | α | X | 05/09 |
| 4332E | Americium-243 Radioactivity Standard | 5 mL | 40 | Am(NO ₃) ₃ | α | X | 10/08 |
| 4334j | Plutonium-242 Radioactivity Standard | 5 mL | 26 | Pu(NO ₃) ₆ | α | X | 08/17 |
| 4337 | Lead-210 Radioactivity Standard | 5 mL | 9 000 | Pb(NO ₃) ₂ | β - | X | 06/06 |
| 4338A | Plutonium-240 Radioactivity Standard Solution | 5 mL | 40 | Pu(NO ₃) ₆ | α | X | 05/96 |

*If no "X", then license is not required unless the institution possesses a specific license that covers the listed radionuclide.

**Value for Approximate Massic Activity for SRM 4326a is expressed as s⁻¹•g⁻¹.

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only

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|-------|--|---------------|--------------------------------|-----------------------------------|-------------|-------------------------------------|-----------------------------|
| 4339b | Radium-228 Radioactivity Solution | 5 mL | 200 | Ra(NO ₃) ₂ | β - | X | 10/10 |
| 4340B | Plutonium-241 Radioactivity Standard | 5 mL | 250 | Pu(NO ₃) ₆ | β - | X | 06/07 |
| 4341a | Neptunium-237 Radioactivity Standard | 5 mL | 150 | Np(NO ₃) ₅ | α | X | 09/12 |
| 4342A | Thorium-230 Radioactivity Standard | 5 mL | 40 | Th(NO ₃) ₄ | α | X | 04/07 |
| 4361C | Hydrogen-3 Radioactivity Standard | 500 mL | 2 | H ₂ O | β - | -- | 09/98 |
| 4370d | Europium-152 Radioactivity Standard | 5 mL | 18 700 | EuCl ₃ | β -, EC, γ | X | 7/18 |
| 4915F | Cobalt-60 Radioactivity Standard Solution | 5 mL | 60 000 | CoCl ₂ | β -, γ | X | 11/05 |
| 4919I | Strontium-90 Radioactivity Standard | 5 mL | 4 200 | SrCl ₂ | β - | X | 12/06 |
| 4926E | Hydrogen-3 Radioactivity Standard | 20 mL | 5 000 | H ₂ O | β - | -- | 09/98 |
| 4927g | Hydrogen-3 Radioactivity Standard | 5 mL | 540 000 | H ₂ O | β - | -- | 05/15 |
| 4929F | Iron-55 Radioactivity Standard | 5 mL | 59 000 | FeCl ₃ | EC, β - | -- | 11/05 |
| 4943 | Chlorine-36 Radioactivity Standard | 3 mL | 10 000 | NaCl | β - | -- | 12/84 |
| 4949d | Iodine-129 Radioactivity Standard | 5 mL | 2 700 | NaI | β - | X | 01/14 |
| 4965a | Radium-226 Radioactivity Standard | 5 mL | 30 | RaCl ₂ | α, γ | X | 01/07 |
| 4966A | Radium-226 Radioactivity Standard | 5 mL | 290 | RaCl ₂ | α, γ | X | 01/07 |
| 4967A | Radium-226 Radioactivity Standard Solution | 5 mL | 2 500 | RaCl ₂ | α, γ | X | 09/03 |
| 4969 | Radium-226 Radioactivity Standard | 5 mL | 3 | RaCl ₂ | α, γ | X | 09/98 |

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