

205.4 - Radioactive Solutions

These SRMs are intended for the calibration of radioactivity measuring instruments and for the monitoring of chemical and geochemical processes. They are calibrated in terms of activity per gram of solution. Each SRM is contained in a flame-sealed glass ampoule or bottle and, except as noted, consists of the radionuclide dissolved in an aqueous solution (usually acidic).

When an import permit for radioactive material is required of a customer outside the U.S., NIST must have a copy to complete an order and facilitate shipment.

"Radionuclide Calibration Services"

"Radioactive SRM Purchasing Instructions & License Certification Form"

["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
4239a	Strontium-90 Radioactivity Standard Solution	5 mL	29 500	SrCl ₂	β^-	X	12/19
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
4290b	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
4324c	Uranium-232 Radioactivity Standard Solution	5 mL	26	UO ₂ (NO ₃) ₂	α	X	10/22
4326a	Polonium-209 Radioactivity Standard	5 mL	39**	PoCl ₄	α , EC	X	12/13
4328d	Thorium-229 Radioactivity Standard	5 mL	41	Th(NO ₃) ₄	α	X	12/22
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
4334i	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
4338b	Plutonium-240 Radioactivity Standard Solution	5 mL	41	Pu(NO ₃) ₆	α	X	08/19
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) ₃	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
4929E	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

- Certified values are normal font
- Non-certified or reference values are italicized
- Non-certified values in parentheses are for information only

*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.