



# Radiochemistry

Matrices in soil, vegetation, air filters, and water for monitoring of radiochemicals.



## Radiochemistry PT Schedule

### 2026 Schedule

	Scheme #	Opens	Closes
Q	RAD 144	Jan 12	Feb 26
Q	RAD 145	Apr 13	May 28
Q	RAD 146	Jul 13	Aug 27
Q	RAD 147	Oct 9	Nov 23

### 2027 Schedule

	Scheme #	Opens	Closes
Q	RAD 148	Jan 11	Feb 25
Q	RAD 149	Apr 12	May 27
Q	RAD 150	Jul 12	Aug 26
Q	RAD 151	Oct 8	Nov 22



## MRAD PT Schedule

### 2026 Schedule

Scheme #	Opens	Closes
MRAD 44	Mar 23	May 22
MRAD 45	Sep 21	Nov 20

2 schemes per year - Open for 60 days

### 2027 Schedule

Scheme #	Opens	Closes
MRAD 46	Mar 22	May 21
MRAD 47	Sep 20	Nov 19

2 schemes per year - Open for 60 days

Schedule subject to change – see Waters ERA's website at [eraqc.com](http://eraqc.com)

For the latest products and information, please visit us online at [eraqc.com](http://eraqc.com)

# Contents

**CRM** Certified Reference Material  
**PT** Proficiency Testing  
**QR** QuiK Response  
**RM** Reference Material

**Q** All Waters ERA WS Radchem PTs open quarterly. Quarterly months are January, April, July, and October.

**\*** All Waters ERA MRAD PTs open in March and September.

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**CRM:** A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at [eraqc.com/Accreditations](http://eraqc.com/Accreditations).

**PT:** A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

**QR:** Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

**RM:** A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

# WS Radchem

All Radchem standards are provided as convenient, easy-to-prepare concentrates except for tritium, which is provided as a whole-volume sample.

Gamma Emitters			
CRM	PT	Q	QR
Cat. #758	Cat. #808		Cat. #758QR

One 12 mL screw-top vial yields up to 2 liters after dilution.

Barium-133.....	10-100 pCi/L
Cesium-134.....	10-100 pCi/L
Cesium-137.....	20-240 pCi/L
Cobalt-60.....	10-120 pCi/L
Zinc-65.....	30-360 pCi/L

Gross Alpha/Beta			
CRM	PT	Q	QR
Cat. #759	Cat. #809		Cat. #759QR

One 12 mL screw-top vial yields up to 1 liter after dilution.

Gross alpha as thorium-230.....	7-75 pCi/L
Gross beta as cesium-137.....	8-75 pCi/L

Naturals			
CRM	PT	Q	QR
Cat. #751	Cat. #811		Cat. #751QR

One 12 mL screw-top vial yields up to 8 liters after dilution.

Radium-226.....	1-20 pCi/L
Radium-228.....	2-20 pCi/L
Uranium (Nat).....	2-70 pCi/L
Uranium (Nat) mass.....	3-104 µg/L



Learn more about  
Radiochemistry products

Tritium			
CRM	PT	Q	QR
Cat. #752	Cat. #812		Cat. #752QR

One 250 mL whole-volume bottle is ready to analyze as received. Includes tritium at 1000-24000 pCi/L.

Iodine-131			
CRM	PT	Q	QR
Cat. #750	Cat. #810		Cat. #750QR

One 12 mL screw-top vial yields up to 2 liters after dilution. Contains iodine-131 within the range 3-30 pCi/L. Due to short half-life, CRMs, PTs, and QRs are available only during January, April, July, and October.

Strontium-89/90			
CRM	PT	Q	QR
Cat. #757	Cat. #807		Cat. #757QR

One 12 mL screw-top vial yields up to 2 liters after dilution.

Strontium-89.....	10-70 pCi/L
Strontium-90.....	3-45 pCi/L



# Radchem Lab Control & Matrix Spiking (LCS/MS)

Radiochemistry LCS/MS standards are prepared according to your specifications at activity levels that enable you to directly fortify your batch laboratory control and matrix spike QC samples. These single-use spiking standards are verified, conveniently packaged in 2–20 mL glass vials, and very economical.

## The direct benefits:

- **Easy-to-use** – LCS/MS spiking standards are ready-to-use – no dilutions are required.
- **Reliable and consistent** – Eliminate the possibility of errors from the contamination or repeated multiple dilutions of your primary stock standards.
- **Independently verified** – LCS/MS standards are analytically verified and traced to NIST SRMs where available.
- **Save money** – You no longer need to pay for microcuries of activity when you only need picocuries. You also eliminate the cost of activity loss for short-lived isotopes.
- **Reduce analytical cost** – You no longer need to spend valuable instrument time re-verifying standard stability. Order what you expect to use on a quarterly or annual basis – we'll do the verification.

## The process is easy:

1. Select from any of the following carrier-free, single radionuclide standards.
2. Choose an activity up to the maximum listed in the table below.
3. Choose a convenient volume: 2 to 20 mL glass vials available.
4. For labs that analyze samples with more elevated activities, call for standard availability and pricing.

### Single Radionuclide Spiking Standards

Cat. #	Radionuclide	Maximum Activity/Vial
AM241	Americium-241	40 pCi
BA133	Barium-133	400 pCi
CS134	Cesium-134	200 pCi
CS137	Cesium-137	400 pCi
CO60	Cobalt-60	200 pCi
GAB	Gross alpha/beta	30/40 pCi
GA	Gross alpha (Th-230)	30 pCi
GB	Gross beta (Cs-137)	40 pCi
PU238	Plutonium-238	40 pCi
PU239	Plutonium-239	40 pCi
RA226	Radium-226	20 pCi
RA228	Radium-228	Call
SR89	Strontium-89	200 pCi
SR90	Strontium-90	40 pCi
H3	Tritium	2000 pCi
UNAT	Uranium, natural	40 pCi
ZN65	Zinc-65	600 pCi

# MRAD Solids

## Soil Radionuclides

RM Cat. #608	PT Cat. #802		QR Cat. #608QR
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One 500 cc standard includes the alpha, beta, and gamma emitting radionuclides listed below.

Actinium-228.....	500–5000 pCi/kg
Americium-241.....	50–2000 pCi/kg
Bismuth-212.....	500–5000 pCi/kg
Bismuth-214.....	500–5000 pCi/kg
Cesium-134.....	1000–10,000 pCi/kg
Cesium-137.....	1000–10,000 pCi/kg
Cobalt-60.....	1000–10,000 pCi/kg
Lead-212.....	500–5000 pCi/kg
Lead-214.....	500–5000 pCi/kg
Plutonium-238.....	50–2000 pCi/kg
Plutonium-239.....	50–2000 pCi/kg
Potassium-40.....	5000–50,000 pCi/kg
Strontium-90.....	500–10,000 pCi/kg
Thorium-234.....	500–5000 pCi/kg
Uranium-234.....	500–5000 pCi/kg
Uranium-238.....	500–5000 pCi/kg
Uranium (Nat).....	1000–10,000 pCi/kg
Uranium (Nat) mass.....	1500–15,000 µg/kg
Zinc-65.....	1000–10,000 pCi/kg

## Vegetation Radionuclides

RM Cat. #609	PT Cat. #803		QR Cat. #609QR
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One 500 cc standard includes the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241.....	50–5000 pCi/kg
Cesium-134.....	300–3000 pCi/kg
Cesium-137.....	300–3000 pCi/kg
Cobalt-60.....	300–3000 pCi/kg
Curium-244.....	50–5000 pCi/kg
Plutonium-238.....	50–5000 pCi/kg
Plutonium-239.....	50–5000 pCi/kg
Potassium-40.....	5000–50,000 pCi/kg
Strontium-90.....	500–10,000 pCi/kg
Uranium-234.....	50–5000 pCi/kg
Uranium-238.....	50–5000 pCi/kg
Uranium (Nat).....	100–10,000 pCi/kg
Uranium (Nat) mass.....	150–15,000 µg/kg
Zinc-65.....	300–3000 pCi/kg

# MRAD Air Filter

## Air Filter Radionuclides

RM	PT		QR
Cat. #606	Cat. #800		Cat. #606QR

One 47 mm diameter glass fiber filter contains the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241.....	2-80 pCi/filter
Cesium-134.....	50-1500 pCi/filter
Cesium-137.....	50-1500 pCi/filter
Cobalt-60.....	50-1500 pCi/filter
Iron-55.....	50-1500 pCi/filter
Plutonium-238.....	2-80 pCi/filter
Plutonium-239.....	2-80 pCi/filter
Strontium-90.....	5-200 pCi/filter
Uranium-234.....	2-80 pCi/filter
Uranium-238.....	2-80 pCi/filter
Uranium (Nat).....	4-160 pCi/filter
Uranium (Nat) mass.....	6-240 µg/filter
Zinc-65.....	50-1500 pCi/filter

## Air Filter Gross Alpha/Beta

RM	PT		QR
Cat. #607	Cat. #801		Cat. #607QR

One acrylic treated 47 mm diameter glass fiber filter contains the radionuclides listed below.

Gross alpha as thorium-230.....	5-100 pCi/filter
Gross beta as cesium-137.....	5-100 pCi/filter

# MRAD Water

## Water Radionuclides

RM	PT		QR
Cat. #617	Cat. #804		Cat. #617QR

One 12 mL screw-top vial yields up to 2 liters after dilution. Includes the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241.....	10-200 pCi/L
Cesium-134.....	100-3000 pCi/L
Cesium-137.....	100-3000 pCi/L
Cobalt-60.....	100-3000 pCi/L
Iron-55.....	100-3000 pCi/L
Plutonium-238.....	10-200 pCi/L
Plutonium-239.....	10-200 pCi/L
Strontium-90.....	50-1000 pCi/L
Uranium-234.....	10-200 pCi/L
Uranium-238.....	10-200 pCi/L
Uranium (Nat).....	20-400 pCi/L
Uranium (Nat) mass.....	30-600 µg/L
Zinc-65.....	100-3000 pCi/L

## Water Gross Alpha/Beta

RM	PT		QR
Cat. #615	Cat. #805		Cat. #615QR

One 12 mL screw-top vial yields up to 2 liters after dilution. Includes the radionuclides below.

Gross alpha as thorium-230.....	10-200 pCi/L
Gross beta as cesium-137.....	10-200 pCi/L

## Water Tritium

RM	PT		QR
Cat. #616	Cat. #806		Cat. #616QR

One 125 mL whole-volume bottle is ready to analyze as received.

Tritium.....	3000-30,000 pCi/L
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