



# LOW-LEVEL CRMs

Synthetic drinking and wastewater matrices with low concentrations of analytes for testing water supply, drinking water, ground water, water pollution, or wastewater.

Save time diluting your standards or spending numerous hours producing them yourself with our low-level Certified Reference Materials (CRMs).

Our line of low-level CRMs are optimal for:

- Method development and validation
- System checks
- Evaluating limits of quantitation
- Minimum detection limit studies
- Detection verification
- Many other uses

# Contents

**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 [www.eraqc.com/AboutERA/Accreditations](http://www.eraqc.com/AboutERA/Accreditations).

**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.

Description	CRM	Page
Chlorine	1358	66
Common Inorganics	1249	66
Common Inorganics in Hard Water	1346	66
Common Inorganics in Soft Water	1347	66
Complex Nutrients in Hard Water	1241	68
Cyanide	1345	66
Demand	1354	66
	1242	66
Hexavalent Chromium	1248	67
High Solids	1355	67
Mercury	1341	67
Metals	1244	67
Simple Nutrients	1240	68
Simple Nutrients in Hard Water	1348	68
Simple Nutrients in Soft Water	1349	68
Solids Concentrate	1243	67
Volatiles	1370	68

# Inorganics

## Chlorine

CRM  
Cat. #1358

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Total chlorine..... 75-500 µg/L  
Free chlorine..... 75-500 µg/L

## Common Inorganics

CRM  
Cat. #1349

One liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity.....20-120 mg/L  
Calcium.....2-50 mg/L  
Chloride.....25-500 mg/L  
Conductivity.....80-1,000 µmhos/cm  
Fluoride.....0.25-5 mg/L  
Magnesium.....1-25 mg/L  
pH.....5-10 units  
Potassium.....2-50 mg/L  
Sodium.....5-100 mg/L  
Sulfate.....2-50 mg/L  
Total dissolved solids.....60-750 mg/L  
Total hardness.....9-250 mg/L

## Common Inorganics in Hard Water

CRM  
Cat. #1346

One liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity.....20-100 mg/L  
Calcium.....10-100 mg/L  
Chloride.....20-250 mg/L  
Conductivity.....130-1400 µmhos/cm  
Fluoride.....0.2-2 mg/L  
Magnesium.....2-10 mg/L  
pH.....5-10 units  
Potassium.....2-25 mg/L  
Sodium.....20-250 mg/L  
Sulfate.....20-250 mg/L  
Total dissolved solids.....100-1000 mg/L  
Total hardness.....30-300 mg/L

## Common Inorganics in Soft Water

CRM  
Cat. #1347

A 1 liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity.....20-100 mg/L  
Calcium.....2-50 mg/L  
Chloride.....5-50 mg/L  
Conductivity.....25-300 µmhos/cm  
Fluoride.....0.2-2 mg/L  
Magnesium.....0.5-5 mg/L  
pH.....5-10 units  
Potassium.....1-10 mg/L  
Sodium.....5-50 mg/L  
Sulfate.....5-50 mg/L  
Total dissolved solids.....20-200 mg/L  
Total hardness.....5-75 mg/L

## Cyanide

CRM  
Cat. #1345

One 15 mL screw-cap vial yields up to 2 liters of sample.

Free cyanide.....5-100 µg/L  
Total cyanide.....5-100 µg/L

## Demand

CRM  
Cat. #1354

One 15 mL screw-cap vial yields up to 2 liters of sample.

5-day BOD.....2-25 mg/L  
COD.....2-25 mg/L  
DOC.....1-10 mg/L  
TOC.....1-10 mg/L

CRM  
Cat. #1242

One 15 mL screw-cap vial spiking concentrate yields up to 2 liters of sample.

5-day BOD.....5-75 mg/L  
COD.....10-150 mg/L  
DOC.....2-40 mg/L  
TOC.....2-40 mg/L

CRM - Certified Reference Material

## Inorganics (continued)

### High Solids

CRM  
Cat. #1355

One 24 mL screw-cap vial with a powder concentrate yields 1 liter of solution.

Total dissolved solids..... 100-1000 mg/L  
Total suspended solids (TSS)..... 5-50 mg/L

### Solids Concentrate

CRM  
Cat. #1243

One 24 mL screw-cap vial concentrate yields up to 1 liter of sample.

Total dissolved solids.....10-250 mg/L  
Total suspended solids (TSS).....5-50 mg/L

## Metals

### Hexavalent Chromium

CRM  
Cat. #1248

One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Hexavalent chromium.....5-100 µg/L

### Mercury

CRM  
Cat. #1341

One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Mercury, total.....0.1 to 1.2 µg/L

## Metals (continued)

### Metals

CRM  
Cat. #1244

One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Aluminum.....	200-4000 µg/L
Antimony.....	95-900 µg/L
Arsenic.....	70-900 µg/L
Barium.....	100-2500 µg/L
Beryllium.....	8-900 µg/L
Boron.....	800-2000 µg/L
Cadmium.....	8-750 µg/L
Chromium, total.....	17-1000 µg/L
Cobalt.....	28-1000 µg/L
Copper.....	40-900 µg/L
Iron.....	200-4000 µg/L
Lead.....	70-3000 µg/L
Manganese.....	70-4000 µg/L
Molybdenum.....	60-600 µg/L
Nickel.....	80-3000 µg/L
Selenium.....	90-2000 µg/L
Silver.....	26-600 µg/L
Strontium.....	30-300 µg/L
Thallium.....	60-900 µg/L
Vanadium.....	55-2000 µg/L
Zinc.....	100-2000 µg/L

The Industry Standard  
for over 40 years



## Nutrients

## Complex Nutrients in Hard Water

CRM  
Cat. #1241

One 15 mL screw-cap vial spiking concentrate yields up to 2 liters of sample.

Total Kjeldahl nitrogen.....	0.5–5 mg/L
Total nitrogen.....	1–20 mg/L
Total phosphorus.....	0.5–5 mg/L

## Simple Nutrients

CRM  
Cat. #1240

Two 15 mL screw-cap vials yields up to 2 liters of sample.

Ammonia (N).....	1–20 mg/L
Nitrate (NO <sub>3</sub> ).....	0.5–10 mg/L
Nitrite (NO <sub>2</sub> ).....	0.5–5 mg/L
Total oxidised nitrogen.....	1–15 mg/L
Soluble reactive phosphorus (P).....	0.5–5 mg/L

## Simple Nutrients in Hard Water

CRM  
Cat. #1348

Two 15 mL screw-cap vial spiking concentrates and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Ammonium (NH <sub>4</sub> ).....	0.1–1 mg/L
Nitrate (NO <sub>3</sub> ).....	3–60 mg/L
Nitrite (NO <sub>2</sub> ).....	0.1–1 mg/L
Soluble reactive phosphorus (P).....	0.5–5 mg/L
Total oxidised nitrogen (TON).....	3–60 mg/L

## Simple Nutrients in Soft Water

CRM  
Cat. #1349

Two 15 mL screw-cap vial spiking concentrates and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Ammonium (NH <sub>4</sub> ).....	0.1–1 mg/L
Nitrate (NO <sub>3</sub> ).....	3–60 mg/L
Nitrite (NO <sub>2</sub> ).....	0.1–1 mg/L
Soluble reactive phosphorus (P).....	0.5–5 mg/L
Total oxidised nitrogen (TON).....	3–60 mg/L

## Organics

## Volatiles

CRM  
Cat. #1370

One 2 mL flame-sealed ampule spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample to be analyzed for the compounds listed below at 0.1–50 µg/L.

Benzene	Ethylbenzene	o-Xylene
Carbon tetrachloride	Methylene chloride	m-Xylene
Chlorobenzene	Styrene	p-Xylene
1,2-Dichlorobenzene	Tetrachloroethene	m+p-Xylene
1,4-Dichlorobenzene	Toluene	Xylenes, total
1,2-Dichloroethane	1,2,4-Trichlorobenzene	
1,1-Dichloroethylene	1,1,1-Trichloroethane	
cis-1,2-Dichloroethylene	1,1,2-Trichloroethane	
trans-1,2-Dichloroethylene	Trichloroethene	
1,2-Dichloropropane	Vinyl chloride	



# DON'T STRESS THE TEST

We understand one of the biggest challenges you face in your laboratory is time. To help reduce laboratory stress, we provide you with final PT results in just two business days.

- Gain peace of mind knowing that you passed your PT quickly
- Identify the root cause of analysis problems faster
- Implement corrective actions sooner to improve the defensibility of results in less time

## When Time Is Not On Your Side

A critical evaluation is just that – critical. Sometimes you need to quickly demonstrate corrective action or confirm a new method, meaning you can't wait for a regularly scheduled PT. Quik Response™ PTs are on-demand Proficiency Tests that return results within minutes of entering your study data. No waiting. No wondering. No worries. Just results for critical evaluations.

Ask your Waters ERA representative or an authorized sales partner about Quik Response PTs.

For more information, **contact our customer service team at 800.372.0122 / +1.303.431.8454.** or **email [era\\_info@waters.com](mailto:era_info@waters.com).**