

# CALIBRATION STANDARDS

A variety of inorganic standards including metals, anions, pH, and other common inorganics that can be used for primary calibration or to prepare second source calibration standards.



**Labcare**  
de Colombia



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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 [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.

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# 1000 mg/L Standards

Standards can be used for primary calibration or to prepare second source calibration check standards. They are analytically traceable to NIST SRM's where available, and are guaranteed stable for one year. The certification documentation includes manufacturing uncertainties, traceability summaries and densities to aid in performing gravimetric dilutions. The documentation for metal standards includes impurities.

## Inorganics – 1000 mg/L

### Chemical Oxygen Demand (COD)

500 mL Bottle  
Cat. #974

125 mL Bottle  
Cat. #042

One 1000 mg/L standard preserved with H<sub>2</sub>SO<sub>4</sub> in an amber glass bottle.

### Total Kjeldahl Nitrogen (TKN)

500 mL Bottle  
Cat. #996

125 mL Bottle  
Cat. #043

One 1000 mg/L standard preserved with HCl in a poly bottle.

### MBAS/LAS Surfactants

Cat. #975

One 15 mL screw-cap vial with LAS at 1000 mg/L preserved with H<sub>2</sub>SO<sub>4</sub>.

### Total Organic Carbon (TOC)

Cat. #978

One 500 mL amber glass bottles with TOC at 1000 mg/L preserved with H<sub>2</sub>SO<sub>4</sub>.

### Total Organic Halides (TOX)

Cat. #976

One 2 mL flame-sealed ampule with TOX at 1000 mg/L in methanol.

### Phenol

Cat. #982

One 500 mL amber glass bottle with phenol at 1000 mg/L preserved with H<sub>2</sub>SO<sub>4</sub>.

### Sulfide

Cat. #999

One 10 mL flame-sealed ampule containing 1000 mg/L sulfide preserved with NaOH and zinc acetate.

## Ions – 1000 mg/L

Parameter	Matrix	500 mL Bottle	125 mL Bottle
Acetate	H <sub>2</sub> O	—	Cat. #78202
Ammonia as NH <sub>3</sub>	H <sub>2</sub> O	Cat. #986	Cat. #044
Ammonia as N	H <sub>2</sub> O	Cat. #985	Cat. #045
Bromate	H <sub>2</sub> O	—	Cat. #065
Bromide	H <sub>2</sub> O	Cat. #987	Cat. #046
Chlorate	H <sub>2</sub> O	—	Cat. #066
Chloride	H <sub>2</sub> O	Cat. #988	Cat. #047
Chlorite	H <sub>2</sub> O	—	Cat. #067
Complex cyanide*	NaOH	Cat. #998	Cat. #049
Cyanide (free)*	NaOH	Cat. #997	Cat. #048
Fluoride	H <sub>2</sub> O	Cat. #989	Cat. #050
Iodide	H <sub>2</sub> O	—	Cat. #78212
Nitrate as NO <sub>3</sub>	H <sub>2</sub> O	Cat. #992	Cat. #051
Nitrate as N	H <sub>2</sub> O	Cat. #991	Cat. #052
Nitrite as N	H <sub>2</sub> O	Cat. #990	Cat. #053
Perchlorate	H <sub>2</sub> O	—	Cat. #068
Phosphate as PO <sub>4</sub>	H <sub>2</sub> O	Cat. #994	Cat. #060
Phosphate as P	H <sub>2</sub> O	Cat. #993	Cat. #061
Sulfate	H <sub>2</sub> O	Cat. #995	Cat. #062

\*Dangerous good. Requires special shipping.

## Cations by Ion Chromatography – 100 mg/L

Parameter	Matrix	125 mL Bottle
Ammonium as NH <sub>4</sub>	H <sub>2</sub> O	Cat. #78102
Ammonium as N	H <sub>2</sub> O	Cat. #78104

## Cations by Ion Chromatography – 1000 mg/L

Parameter	Matrix	125 mL Bottle
Calcium	H <sub>2</sub> O	Cat. #K10
Magnesium	H <sub>2</sub> O	Cat. #K11

## Metals – 1000 mg/L

Parameter	Matrix		125 mL Bottle
Aluminum	HNO <sub>3</sub>	DG	Cat. #011
Arsenic	HNO <sub>3</sub>	DG	Cat. #013
Beryllium	HNO <sub>3</sub>	DG	Cat. #015
Bismuth	HNO <sub>3</sub>	DG	Cat. #K01
Calcium	HNO <sub>3</sub>	DG	Cat. #018
Chromium	HNO <sub>3</sub>	DG	Cat. #020
Chromium VI	H <sub>2</sub> O	—	Cat. #019
Cobalt	HNO <sub>3</sub>	DG	Cat. #021
Copper	HNO <sub>3</sub>	DG	Cat. #022
Iron	HNO <sub>3</sub>	DG	Cat. #023
Lead	HNO <sub>3</sub>	DG	Cat. #024
Lithium	HNO <sub>3</sub>	DG	Cat. #K04
Magnesium	HNO <sub>3</sub>	DG	Cat. #025
Manganese	HNO <sub>3</sub>	DG	Cat. #026
Mercury	HNO <sub>3</sub>	DG	Cat. #027
Molybdenum	HNO <sub>3</sub>	DG	Cat. #028
Nickel	HNO <sub>3</sub>	DG	Cat. #029
Phosphorus	HNO <sub>3</sub>	DG	Cat. #063
Potassium	HNO <sub>3</sub>	DG	Cat. #030
Selenium	HNO <sub>3</sub>	DG	Cat. #031
Silica	H <sub>2</sub> O	—	Cat. #064
Silicon	HNO <sub>3</sub>	DG	Cat. #032
Silver	HNO <sub>3</sub>	DG	Cat. #033
Sodium	HNO <sub>3</sub>	DG	Cat. #034
Strontium	HNO <sub>3</sub>	DG	Cat. #035
Thallium	HNO <sub>3</sub>	DG	Cat. #036
Tin	HCl	DG	Cat. #037
Titanium	HCl	DG	Cat. #038
Vanadium	HNO <sub>3</sub>	DG	Cat. #039
Yttrium	HNO <sub>3</sub>	DG	Cat. #K08
Zinc	HNO <sub>3</sub>	DG	Cat. #040

DG – Dangerous good. Requires special shipping.

Other metals, concentrations,  
and volumes are also available.

Call Waters ERA Customer Service  
for more information.

## ICP-MS Metals

These standards come with a Certificate of Traceability and Uncertainty. Use for initial as well as continuing calibration and tuning verification. Provided as convenient concentrates with densities allowing you to easily perform gravimetric dilutions.

### ICP-MS Trace Metals

CRM

Cat. #TMS001\*

One 125 mL screw-cap poly bottle preserved with HNO<sub>3</sub> and tartaric acid\*

Aluminum.....	10.0 mg/L	Manganese.....	10.0 mg/L
Antimony.....	10.0 mg/L	Molybdenum.....	10.0 mg/L
Arsenic.....	10.0 mg/L	Nickel.....	10.0 mg/L
Barium.....	10.0 mg/L	Selenium.....	10.0 mg/L
Beryllium.....	10.0 mg/L	Silver.....	10.0 mg/L
Cadmium.....	10.0 mg/L	Thallium.....	10.0 mg/L
Chromium.....	10.0 mg/L	Thorium.....	10.0 mg/L
Cobalt.....	10.0 mg/L	Uranium.....	10.0 mg/L
Copper.....	10.0 mg/L	Vanadium.....	10.0 mg/L
Iron.....	10.0 mg/L	Zinc.....	10.0 mg/L
Lead.....	10.0 mg/L		

\*Dangerous good. Requires special shipping.

### ICP-MS Major Cations

CRM

Cat. #TMS002\*

One 125 mL screw-cap poly bottle preserved with HNO<sub>3</sub>\*

Calcium.....	50.0 mg/L	Potassium.....	50.0 mg/L
Magnesium.....	50.0 mg/L	Sodium.....	50.0 mg/L

\*Dangerous good. Requires special shipping.

## Anions

### Ion Chromatography

CRM

Cat. #981

One 15 mL screw-cap vial yields up to 200 mL after dilution. Designed to calibrate or verify IC calibrations.

Call for anion standards at lower levels.

Bromide.....	0.2–20 mg/L	Nitrate as N.....	0.2–20 mg/L
Chloride.....	0.2–20 mg/L	Phosphate as P.....	0.5–30 mg/L
Fluoride.....	0.1–10 mg/L	Sulfate.....	0.5–30 mg/L



Learn more about Calibration products

## AA/ICP Metals

All metals standards come with a Certificate of Traceability. The ICP Trace Metals standard also includes uncertainties. Use as initial as well as continuing calibration verification.

### Flame AA Trace Metals

CRM  
Cat. #508

One 24 mL screw-cap vial, preserved with HNO<sub>3</sub>, yields up to 500 mL after dilution. Designed for flame AA. Includes aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, silver, strontium, thallium, vanadium, and zinc.

### Flame AA Cations

CRM  
Cat. #530

One 15 mL screw-cap vial, preserved with HNO<sub>3</sub>, yields up to 250 mL after dilution.

Use with ICP, IC, and AA methods.

Calcium.....	10–200 mg/L
Magnesium.....	10–200 mg/L
Potassium.....	5–100 mg/L
Sodium.....	10–250 mg/L

### ICP Trace Metals

CRM  
Cat. #524\*

One 500 mL whole-volume standard, preserved with HNO<sub>3</sub> and HCl, is ready-to-use\*

Aluminum.....	10.0 mg/L
Antimony.....	1.0 mg/L
Arsenic.....	1.0 mg/L
Barium.....	1.0 mg/L
Beryllium.....	1.0 mg/L
Bismuth.....	1.0 mg/L
Boron.....	1.0 mg/L
Cadmium.....	1.0 mg/L
Calcium.....	10.0 mg/L
Chromium.....	1.0 mg/L
Cobalt.....	1.0 mg/L
Copper.....	1.0 mg/L
Iron.....	10.0 mg/L
Lanthanum.....	10.0 mg/L
Lead.....	10.0 mg/L
Magnesium.....	10.0 mg/L
Manganese.....	1.0 mg/L
Molybdenum.....	1.0 mg/L
Nickel.....	1.0 mg/L
Phosphorus.....	1.0 mg/L
Potassium.....	10.0 mg/L
Selenium.....	10.0 mg/L
Sodium.....	10.0 mg/L
Strontium.....	1.0 mg/L
Tin.....	1.0 mg/L
Titanium.....	1.0 mg/L
Vanadium.....	1.0 mg/L
Zinc.....	1.0 mg/L

\*Dangerous good. Requires special shipping.

## pH Buffers

Our pH Buffers are analytically traceable to NIST SRMs, mercury free, guaranteed stable for at least one year after your receipt, and are supplied with a full certificate of analysis. Choose single bottles or convenient six-bottle cases.

Value	Volume	Single Bottle	Six-Bottle Case
pH 4.00	1 pint	Cat. #127	Cat. #128
pH 7.00	1 pint	Cat. #131	Cat. #132
pH 10.00	1 pint	Cat. #135	Cat. #136
Case of 2 ea.	Pints		Cat. #141