

Certified Reference Materials

Soil and Biological Solutions

A sampling of our most popular simulated solutions. Simulations of natural solids are based upon dissolution of 1 gram of a natural material in acid and diluted to 100 mL.

	Sea Water	River Sediment Solution B	Estuarine Sediment Solution	Soil Solution A	Orchard Leaves Solution
Catalog No.	CRM-SW	CRM-RS-B	CRM-ES	CRM-SOIL-A	CRM-OL
Matrix	2% HNO ₃ mg/kg	4% HNO ₃ µg/mL	4% HNO ₃ µg/mL	4% HNO ₃ µg/mL	4% HNO ₃ µg/mL
Elements					
Aluminum	0.5	600	700	500	3
Antimony	--	0.04	0.004	0.03	--
Arsenic	0.02	0.20	0.10	0.2	0.1
Barium	0.05	4	--	5	0.5
Beryllium	--	--	0.02	--	--
Boron	5	--	--	--	--
Bromide	65	--	--	--	0.1
Cadmium	(0.0001)	0.03	(0.0004)	0.003	0.001
Calcium	400	300	80	350	200
Carbon	30	--	--	--	--
Chloride	19,000	--	--	--	7
Chromium	(0.0003)	15	0.80	--	0.03
Cobalt	--	0.15	0.10	--	0.002
Copper	0.01	1	0.20	0.30	0.1
Iodide	0.05				
Iron	0.02	400	350	200	3.0
Lead	0.004	2.0	0.30	0.40	0.5
Lithium	0.1				--
Magnesium	1,250	120	100	70	60
Manganese	0.01	6	4.0	0.10	1
Nickel	(0.0001)	0.50	0.30	0.30	0.01
Phosphorus	0.1	10	5.0	10	20
Potassium	380	200	150	200	150
Rubidium	0.2	--	--	--	0.1
Selenium	0.004	0.01	0.05	0.01	0.0008
Silicon	4	3000.0	3000	3000	5
Sodium	10,500	50	200	70	1
Strontium	12	--	--	--	--
Sulfur	900	--	--	--	20
Thallium	--	0.01	--	--	--
Thorium	--	0.10	0.10	0.10	--
Uranium	(0.0015)	0.03	--	0.01	--
Vanadium	(0.0003)	1	1	0.10	0.005
Zinc	0.005	5	1.5	1	25

Note: Values in parentheses are for information purposes only.

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Solid CRM List

The following is a sampling of Certified Reference Materials (CRM) in solid form currently available. At least two different analytical techniques were used to certify these CRMs for major, minor and trace elements after total digestion. Data for additional digestion techniques, such as EPA-3050 digestion procedure, are included for most.

The soil samples are dried and crushed, coarse particles are removed, and only particles that a sieve opening of 150 µm (No 100) are collected, blended, and bottled. Samples from each lot are checked for homogeneity, and if found homogeneous, the digestion procedures are performed and the analytes determined.

The material is intended for the calibration of instrumentation, the evaluation of analytical methods, and the quality control of the analytical measurements.

Catalog No.	Matrix	Level*	Certified For	Weight/grams
CRM-DF-A	Dog Food	A	Metals, Carbon, Sulfur, Nitrogen	50
CRM-CM-A	Corn Meal	A	Metals, Carbon, Sulfur, Nitrogen	50
CRM-COAL-A1	Coal	A	Metals, Sulfur	50
CRM-CSM-A	Cotton Seed Meal	A	Metals, Carbon, Sulfur, Nitrogen	50
CRM-LO-A	Loam	A	Metals, Carbon, Sulfur	50
CRM-LO-B	Loam	B	Metals, Carbon, Sulfur	50
CRM-LO-C	Loam	C	Metals	40
CRM-LO-D	Loam	D	Metals	40
CRM-LO-X	Highly Contaminated Loam	X	Metals, Carbon, Sulfur	40
CRM-MP-A	Milk Powder	A	Metals, Carbon, Sulfur, Nitrogen	40
CRM-MS-S	Marine Sediment	A	Metals, Carbon, Sulfur	50
CRM-PC-A	Paint Chips	A	0.1% Lead	40
CRM-PC-B	Paint Chips	B	0.5% Lead	40
CRM-PN-A	Pine Needles	A	Metals, Carbon, Sulfur, Nitrogen	30
CRM-S-D	Sludge	Domestic	Metals, Carbon, Sulfur	50
CRM-S-I	Sludge	Industrial	Metals, Carbon, Sulfur	50
CRM-SA-A	Sand	A	Metals, Carbon, Sulfur	50
CRM-SA-B	Sand	B	Metals, Carbon, Sulfur	50
CRM-SA-C	Sand	C	Metals, Sulfur	50
CRM-SBM-A	Soybean Meal	A	Metals, Carbon, Sulfur, Nitrogen	50
CRM-SG-A	Sugar	A	Metals, Carbon, Sulfur, Nitrogen	75
CRM-WF-S	Wheat Flour	A	Carbon, Sulfur, Nitrogen	40

*Level: A Pristine
 B-D Elevated Concentrations of Priority Pollutants
 X High Concentrations of Priority Pollutants