

Metals by ICP-OES

Analyte	Matrix	MDL	Units	LOD	Units	LLOQ	Units
Al	Liquid	0.010	mg/L	0.040	mg/L	0.025	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.31	mg/kg	0.62	mg/kg	1.0	mg/kg
Sb	Liquid	0.022	mg/L	0.0625	mg/L	0.0625	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	1.1	mg/kg	1.2	mg/kg	1.3	mg/kg
As	Liquid	0.024	mg/L	0.0625	mg/L	0.0625	mg/L
	Air	0.96	µg	-	µg	2.5	µg
	Solids (2 g)	0.79	mg/kg	1.0	mg/kg	1.3	mg/kg
Ba	Liquid	0.00082	mg/L	0.0020	mg/L	0.0063	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.058	mg/kg	0.12	mg/kg	0.125	mg/kg
Be	Liquid	0.0017	mg/L	0.0050	mg/L	0.0050	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.026	mg/kg	0.050	mg/kg	0.10	mg/kg
B	Liquid	0.0045	mg/L	0.018	mg/L	0.025	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.34	mg/kg	0.68	mg/kg	1.0	mg/kg
Cd	Liquid	0.0025	mg/L	0.0075	mg/L	0.0075	mg/L
	Air	0.063	µg	-	µg	0.20	µg
	Solids (2 g)	0.042	mg/kg	0.050	mg/kg	0.15	mg/kg
Ca	Liquid	-	mg/L	-	mg/L	0.025	mg/L
	Air	-	µg	-	µg	1.0	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	0.50	mg/kg
Cr	Liquid	0.0027	mg/L	0.0055	mg/L	0.0125	mg/L
	Air	0.21	µg	-	µg	0.50	µg
	Solids (2 g)	0.081	mg/kg	0.15	mg/kg	0.25	mg/kg
Co	Liquid	0.0039	mg/L	0.0125	mg/L	0.0125	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.070	mg/kg	0.10	mg/kg	0.25	mg/kg
Cu	Liquid	0.0086	mg/L	0.050	mg/L	0.050	mg/L
	Air	0.33	µg	-	µg	2.0	µg
	Solids (2 g)	0.35	mg/kg	2.0	mg/kg	1.0	mg/kg
Fe	Liquid	0.00646	mg/L	0.02584	mg/L	0.0375	mg/L
	Air	0.52	µg	-	µg	2.0	µg
	Solids (2 g)	1.27	mg/kg	-	mg/kg	3.75	mg/kg
Pb	Liquid	0.033	mg/L	0.075	mg/L	0.075	mg/L
	Air	0.59	µg	-	µg	3.0	µg
	Solids (2 g)	0.52	mg/kg	0.625	mg/kg	1.5	mg/kg

Li	Liquid	-	mg/L	-	mg/L	0.0125	mg/L
	Air	-	µg	-	µg	0.50	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	0.25	mg/kg
Mg	Liquid	-	mg/L	-	mg/L	0.025	mg/L
	Air	-	µg	-	µg	1.0	µg
	Solids (2 g)	0.54	mg/kg	-	mg/kg	5.0	mg/kg
Mn	Liquid	0.00104	mg/L	0.0042	mg/L	0.0050	mg/L
	Air	0.040	µg	-	µg	0.20	µg
	Solids (2 g)	0.039	mg/kg	0.078	mg/kg	0.10	mg/kg
Mo	Liquid	0.0026	mg/L	0.0102	mg/L	0.0125	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.074	mg/kg	0.148	mg/kg	0.75	mg/kg
Ni	Liquid	0.0048	mg/L	0.0125	mg/L	0.0125	mg/L
	Air	0.16	µg	-	µg	0.50	µg
	Solids (2 g)	0.090	mg/kg	0.20	mg/kg	0.25	mg/kg
K	Liquid	-	mg/L	-	mg/L	0.075	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	1.5	mg/kg
Se	Liquid	0.037	mg/L	0.094	mg/L	0.094	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.82	mg/kg	1.0	mg/kg	1.9	mg/kg
Ag	Liquid	0.0012	mg/L	0.005	mg/L	0.025	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.20	mg/kg	0.40	mg/kg	0.50	mg/kg
Na	Liquid	-	mg/L	-	mg/L	0.025	mg/L
	Air	-	µg	-	µg	1.0	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	0.50	mg/kg
Sr	Liquid	0.00102	mg/L	0.0041	mg/L	0.0050	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.079	mg/kg	0.16	mg/kg	0.25	mg/kg
Tl	Liquid	0.018	mg/L	0.020	mg/L	0.075	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.47	mg/kg	0.50	mg/kg	1.25	mg/kg
U	Liquid	0.027	mg/L	0.063	mg/L	0.075	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.62	mg/kg	0.75	mg/kg	1.0	mg/kg
V	Liquid	0.0040	mg/L	0.0125	mg/L	0.025	mg/L
	Air	0.33	µg	-	µg	0.50	µg
	Solids (2 g)	0.081	mg/kg	0.30	mg/kg	0.50	mg/kg
Zn	Liquid	0.0077	mg/L	0.025	mg/L	0.063	mg/L
	Air	0.97	µg	-	µg	2.5	µg
	Solids (2 g)	0.22	mg/kg	0.88	mg/kg	1.25	mg/kg

Metals by ICP-MS							
Analyte	Matrix	MDL	Units	LOD	Units	LLOQ	Units
Al	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Sb	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
As	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Ba	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Be	Liquid	-	µg/L	-	µg/L	-	µg/L
	Wipes	0.017	µg	0.034	µg	0.050	µg
	Air	0.000707	µg	0.002828	µg	0.010	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Bi	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
B	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Cd	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	0.0059	µg	0.0118	µg	0.25	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Ca	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Cr	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	0.0081	µg	0.0162	µg	0.25	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Co	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Cu	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Fe	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg

Pb	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	0.011	µg	0.022	µg	0.25	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Li	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Mg	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Mn	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	0.027	µg	0.054	µg	0.25	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Mo	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Ni	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	0.010	µg	0.020	µg	0.25	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Pd	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
P	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
K	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Se	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Si	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Ag	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Na	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Sr	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
S	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg

	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Tl	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Sn	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Ti	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
U	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
V	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Zn	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg

Isotopic by ICP-MS							
Analyte	Matrix	MDL	Units	LOD	Units	LLOQ	Units
U234	Liquid	-	µg/L		µg/L		µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
U235	Liquid	0.00000066	mg/L	0.0000026	mg/L	0.000031	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.000022	mg/kg	0.000093	mg/kg	0.00063	mg/kg
U236	Liquid	-	µg/L		µg/L		µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
U238	Liquid	0.0000049	mg/L	0.000020	mg/L	0.0044	mg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.025	mg/kg	0.081	mg/kg	0.088	mg/kg

Rare Earth by ICP-MS							
Analyte	Matrix	MDL	Units	LOD	Units	LLOQ	Units
Ce	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.066	mg/kg	0.13	mg/kg	0.50	mg/kg
Dy	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0046	mg/kg	0.0093	mg/kg	0.50	mg/kg
Er	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.015	mg/kg	0.029	mg/kg	0.50	mg/kg
Eu	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0024	mg/kg	0.0048	mg/kg	0.50	mg/kg
Gd	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0026	mg/kg	0.0052	mg/kg	0.50	mg/kg
Ho	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0035	mg/kg	0.0070	mg/kg	0.50	mg/kg
La	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0043	mg/kg	0.0086	mg/kg	0.50	mg/kg
Lu	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0020	mg/kg	0.0041	mg/kg	0.50	mg/kg

Nd	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.044	mg/kg	0.089	mg/kg	0.50	mg/kg
Pr	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0030	mg/kg	0.0061	mg/kg	0.50	mg/kg
Sc	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.037	mg/kg	0.074	mg/kg	0.50	mg/kg
Sm	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0021	mg/kg	0.0041	mg/kg	0.50	mg/kg
Tb	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0023	mg/kg	0.0046	mg/kg	0.50	mg/kg
Tm	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0034	mg/kg	0.0068	mg/kg	0.50	mg/kg
Yb	Liquid	-	µg/L	-	µg/L	-	µg/L
	Air	-	µg	-	µg	-	µg
	Solids (2 g)	0.0026	mg/kg	0.0052	mg/kg	0.50	mg/kg

Hex by Ion Chromatography							
Analyte	Matrix	MDL	Units	LOD	Units	LLOQ	Units
Cr ⁶⁺	Liquid	1.38	µg/L	1.26	µg/L	5.0	µg/L
	Air	0.0049	µg	-	µg	0.25	µg
	Solids (2 g)	0.0129	mg/kg	0.045	mg/kg	0.125	mg/kg

Anions by Ion Chromatography							
F ⁻	Liquid	0.091	mg/L	0.36	mg/L	0.90	mg/L
	Air	-	mg	-	mg	-	mg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Cl ⁻	Liquid	0.12	mg/L	0.49	mg/L	1.0	mg/L
	Air	-	mg	-	mg	-	mg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
NO ²⁻	Liquid	0.044	mg/L	0.18	mg/L	0.44	mg/L
	Air	-	mg	-	mg	-	mg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
Br ⁻	Liquid	0.037	mg/L	0.15	mg/L	0.30	mg/L
	Air	-	mg	-	mg	-	mg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
NO ³⁻	Liquid	0.122	mg/L	0.49	mg/L	1.0	mg/L
	Air	-	mg	-	mg	-	mg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
PO ₄ ³⁻	Liquid	0.049	mg/L	0.20	mg/L	0.48	mg/L
	Air	-	mg	-	mg	-	mg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg
SO ₄ ²⁻	Liquid	0.253	mg/L	0.51	mg/L	1.0	mg/L
	Air	-	mg	-	mg	-	mg
	Solids (2 g)	-	mg/kg	-	mg/kg	-	mg/kg

Hg by CVAA							
Analyte	Matrix	MDL	Units	LOD	Units	LLOQ	Units
Hg	Liquid	0.036	µg/L	0.050	µg/L	0.50	µg/L
	Air	0.0034	µg	0.010	µg	0.025	µg
	Solids (0.2 g)	0.0125	mg/kg	0.050	mg/kg	0.125	mg/kg