Inter-laboratory Quality Control Material Data Sheet

QC Material ID: 13957-QC-PR12183

Product Type: Soil

Issue Date: 13 June 2025

Expiry Date: 5 June 2028

Test Name	Methods	n Value	Assigned Value	Assigned Range
Acid P (mg/kg)	Extr Acid P 9G1 9G2 (mg/kg)	11	10.1	9.2 - 11.0
Air-Dry Moist Content (%)	Air-Dry Moisture Content 2A1 (%)	28	0.910	0.643 - 1.177
Ammonium Nitrogen (mg/kg)	Amm-N 7C1 7C2 (mg/kg) **	22	14.6	11.9 - 17.2
Aqua Regia Aluminium (mg/kg)	Aqua Regia Al 17A2 17B1 17B 2 17C1 (mg/kg)	15	4,280	1878 - 6682
Aqua Regia Arsenic (mg/kg)	Aqua Regia As 17A2 17B1 17B 2 17C1 (mg/kg)	13	0.718	0.249 - 1.187
Aqua Regia Boron (mg/kg)	Aqua Regia B 17A2 17B1 17B 2 17C1 (mg/kg)	13	1.30	0.35 - 2.25
Aqua Regia Cadmium (mg/kg)	Aqua Regia Cd 17A2 17B1 17 B2 17C1 (mg/kg)	9	0.0156	0.0076 - 0.0236
Aqua Regia Calcium (mg/kg)	Aqua Regia Ca 17A2 17B1 17 B2 17C1 (mg/kg)	16	380	356 - 404
Aqua Regia Chromium (mg/kg)	Aqua Regia Cr 17A2 17B1 17B 2 17C1 (mg/kg)	17	7.43	3.07 - 11.79
Aqua Regia Cobalt (mg/kg)	Aqua Regia Co 17A2 17B1 17 B2 17C1 (mg/kg)	13	0.500	0.203 - 0.797
Aqua Regia Copper (mg/kg)	Aqua Regia Cu 17A2 17B1 17 B2 17C1 (mg/kg)	18	2.50	1.43 - 3.57
Aqua Regia Iron (mg/kg)	Aqua Regia Fe 17A2 17B1 17B 2 17C1 (mg/kg)	14	4,640	4106 - 5174
Aqua Regia Lead (mg/kg)	Aqua Regia Pb 17A2 17B1 17 B2 17C1 (mg/kg)	16	8.94	6.13 - 11.76
Aqua Regia Magnesium (mg/kg)	Aqua Regia Mg 17A2 17B1 17 B2 17C1 (mg/kg)	19	319	206 - 432
Aqua Regia Manganese (mg/kg)	Aqua Regia Mn 17A2 17B1 17 B2 17C1 (mg/kg)	18	22.8	5.6 - 40.0
Aqua Regia Molybdenum (mg/kg)	Aqua Regia Mo 17A2 17B1 17 B2 17C1 (mg/kg)	11	0.300	0.024 - 0.576

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Aqua Regia Potassium (mg/kg)	Aqua Regia K 17A2 17B1 17B 2 17C1 (mg/kg)	17	210	74 - 346
Aqua Regia Selenium (mg/kg)	Aqua Regia Se 17A2 17B1 17 B2 17C1 (mg/kg)	11	0.300	0.003 - 0.597
Aqua Regia Silicon (mg/kg)	Aqua Regia Si 17A2 17B1 17B 2 17C1 (mg/kg)	9	421	225 - 617
Aqua Regia Sodium (mg/kg)	Aqua Regia Na 17A2 17B1 17 B2 17C1 (mg/kg)	15	42.0	17.1 - 66.9
Aqua Regia Sulphur (mg/kg)	Aqua Regia S 17A2 17B1 17B 2 17C1 (mg/kg)	17	130	103 - 157
Aqua Regia Zinc (mg/kg)	Aqua Regia Zn 17A2 17B1 17 B2 17C1 (mg/kg)	17	7.20	3.64 - 10.76
Bray P (mg/kg)	Extr P Bray 9E1 9E2 (mg/kg)	11	7.82	1.06 - 14.58
CaCl2 Extractable B (mg/kg)	CaCl2 Extractable B 12C1 12C 2 (mg/kg)	17	0.500	0.203 - 0.797
Colwell P (mg/kg)	Extr P Colwell 9B1 9B2 (mg/kg)	22	14.8	7.2 - 22.3
Electrical Cond (dS/m)	Elec Cond 3A1 (dS/m)	33	0.0940	0.0821 - 0.1059
Exch Aluminium (cmol+/kg)	Exch Al 15G1 (cmol+/kg) **	13	0.454	0.297 - 0.611
Exch Calcium (cmol+/kg)	Exch Ca 15A1 (cmol+/kg) **	17	1.56	1.26 - 1.86
Exch Calcium (cmol+/kg)	Exch Ca 15D3 (cmol+/kg)	16	1.50	1.35 - 1.65
Exch Calcium (cmol+/kg)	Exch Ca 15E1 (cmol+/kg)	3 *	1.65	1.06 - 2.24
Exch Magnesium (cmol+/kg)	Exch Mg 15A1 (cmol+/kg) **	17	0.916	0.741 - 1.091
Exch Magnesium (cmol+/kg)	Exch Mg 15D3 (cmol+/kg)	16	0.850	0.761 - 0.939
Exch Magnesium (cmol+/kg)	Exch Mg 15E1 (cmol+/kg)	3 *	0.879	0.526 - 1.232
Exch Potassium (cmol+/kg)	Exch K 15A1 (cmol+/kg) **	16	0.138	0.104 - 0.172
Exch Potassium (cmol+/kg)	Exch K 15D3 (cmol+/kg)	17	0.135	0.116 - 0.155
Exch Potassium (cmol+/kg)	Exch K 15E1 (cmol+/kg)	3 *	0.145	0.127 - 0.163
Exch Sodium (cmol+/kg)	Exch Na 15A1 (cmol+/kg) **	18	0.145	0.084 - 0.205
Exch Sodium (cmol+/kg)	Exch Na 15D3 (cmol+/kg)	16	0.138	0.111 - 0.164



Exch Sodium (cmol+/kg)	Exch Na 15E1 (cmol+/kg)	3 *	0.152	0.116 - 0.188
Ext Copper (mg/kg)	Extr Cu 12A1 (mg/kg)	18	0.408	0.300 - 0.516
Ext Iron (mg/kg)	Extr Fe 12A1 (mg/kg)	21	390	289 - 491
Ext Manganese (mg/kg)	Extr Mn 12A1 (mg/kg)	22	7.22	6.01 - 8.42
Ext Potassium (mg/kg)	Extr K 18A1 (mg/kg)	10	66.2	51.4 - 81.0
Ext Silicon (mg/kg)	Extr Si 13D1 13D2 (mg/kg)	4 *	33.0	30.0 - 36.0
Ext Sulphur (mg/kg)	Extr S 10B1 10B2 10B3 (mg/kg)	9	15.9	14.3 - 17.6
Ext Sulphur (mg/kg)	Extr S 10D1 (mg/kg)	12	11.0	8.8 - 13.2
Ext Zinc (mg/kg)	Extr Zn 12A1 (mg/kg)	20	1.96	1.72 - 2.20
Ext Zinc (mg/kg)	Extr Zn 12D1 (mg/kg)	3 *	2.44	1.97 - 2.91
M3-Aluminium (mg/kg)	M3-Al 18F1 (mg/kg)	17	474	421 - 527
M3-Boron (mg/kg)	M3-B 18F1 (mg/kg)	15	0.200	0.000 - 0.505
M3-Calcium (mg/kg)	M3-Ca 18F1 (mg/kg)	15	310	268 - 352
M3-Copper (mg/kg)	M3-Cu 18F1 (mg/kg)	18	0.257	0.000 - 0.519
M3-Iron (mg/kg)	M3-Fe 18F1 (mg/kg)	18	526	381 - 671
M3-Magnesium (mg/kg)	M3-Mg 18F1 (mg/kg)	16	110	95 - 125
M3-Manganese (mg/kg)	M3-Mn 18F1 (mg/kg)	17	7.35	6.13 - 8.57
M3-Phosphorus (mg/kg)	M3-P ICP 18F1 (mg/kg)	17	12.6	9.6 - 15.6
M3-Potassium (mg/kg)	M3-K 18F1 (mg/kg)	14	53.6	46.5 - 60.7
M3-Sodium (mg/kg)	M3-Na 18F1 (mg/kg)	13	32.0	28.5 - 35.6
M3-Sulphur (mg/kg)	M3-S 18F1 (mg/kg)	14	17.4	14.3 - 20.5
M3-Zinc (mg/kg)	M3-Zn 18F1 (mg/kg)	15	2.02	1.87 - 2.17



Nitrate Nitrogen (mg/kg)	Nitrate N 7B1 7B2 (mg/kg)	13	7.01	5.05 - 8.97
Nitrate Nitrogen (mg/kg)	Nitrate N 7C1 7C2 (mg/kg)	18	7.63	5.81 - 9.45
Olsen P (mg/kg)	Extr P Olsen 9C1 9C2 (mg/kg)	17	8.40	6.09 - 10.71
Organic Carbon W&B (%)	Org C W&B 6A1 (%) **	18	1.83	1.40 - 2.26
PBI Colwell (L/kg)	PBI Colwell 9I2a 9I2b 9I2c (L/kg)	13	71.0	66.4 - 75.6
PBI Olsen (L/kg)	PBI Olsen 9I3a 9I3b 9I3c (L/kg)	3 *	78.7	69.6 - 87.8
PBI Unadjusted (L/kg)	PBI Unadjusted 9I4a 9I4b 9I4c (L/kg)	10	69.0	63.1 - 74.9
pH CaCl2 (pH units)	pH CaCl2 4B1 4B2 4B3 4B4 (pH Units)	29	4.39	4.15 - 4.63
pH Water (pH units)	pH Water 4A1 4A3 (pH Units)	36	5.06	4.82 - 5.30
Total Carbon (%)	Total C 6B2 (%)	29	1.97	1.70 - 2.24
Total Nitrogen (%)	Total N 7A1 7A2 7A3 (%) **	11	0.106	0.079 - 0.133
Total Nitrogen (%)	Total N 7A5 (%)	27	0.115	0.085 - 0.145
Total Org C IR (%)	Total Org Carbon IR 6B4a 6B4b (%)	4 *	1.81	1.56 - 2.06
Total Organic Carbon (%)	Total Org C 6B1 6B3 (%) **	23	1.87	1.45 - 2.29
Total Phosphorus (%)	Total P Not Specified (%) **	20	0.0080	0.0053 - 0.0106
Water Ext Cl (mg/kg)	Water Ext Cl 5A1 5A2 5A3 (mg/kg)	22	24.5	13.5 - 35.4

** n Values < 8 are indicative only and should be used with caution*

*** These methods should be reported on an oven dried basis (105°C) by using the formula given in method 2A1 of Rayment and Lyons 2011.*

Instructions for use: Due to possible moisture reabsorption, re-dry the sample at 40°C to constant weight prior to analysis

Description: 150g+ irradiated, packaged in plastic jar

Homogeneity: This QC material has been assessed as homogeneous for use in an Inter-Laboratory Proficiency Study

Stability: An expiry period consistent with the shelf life of the product, experience, and technical advice has been applied



Storage: Keep samples at a stable temperature < 25°C (eg in air conditioned storage). Reseal containers after each use. Do not store in sunlight.

Values: The *Assigned Value* is the consensus median from an inter-laboratory proficiency round excluding outliers; *n Values* are the number of results used to calculate the assigned value. The *Assigned Range* is 2 standard deviations of *n Values*.

Methods: Multiple methods were used in the preparation of these assigned values.

