



Analyte PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Analytes: 22

Sample # 250851

Potassium Select PT Scheme

Labs Reporting: 11

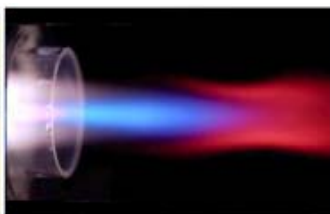
K-Mg-SO4

Statistical Summary

Issue Date : 09/30/2025

Analyte Code	Analyte Sample # 250851	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Analyte IA Ratio	Average Range (R-bar)	Horwitz %RSD
050	Soluble K ₂ O (21.5%)	14	13	22.14	0.8830	22.00	1.1500	0.8382	0.2906	3.81%	1.70	0.2324	2.13%
101	Acid Soluble Ca (%)	4	4	0.3812	0.1883	0.3812	0.2191	0.1883	0.1177	49.40%	2.00	0.0310	4.62%
121	Acid Soluble Mg (10.8%)	9	9	10.95	0.7137	10.95	0.7475	0.8094	0.3372	7.39%	2.52	0.1176	2.79%
131	Water Soluble Mg (%)	3	3	12.77	4.619	12.77		4.619	3.334	36.18%		0.3000	2.73%
143	Elemental S (%)	1		0.1250									
145	Sulfate S, HCl soluble (%)	5	5	22.28	0.6936	22.28		0.6936	0.3878	3.11%		0.1180	2.12%
148	Total S (22%)	13	13	22.56	0.6115	22.56	1.0000	0.6935	0.2404	3.07%	1.62	0.1968	2.11%
151	Acid Soluble As (ppm)	3	0	1.333	1.443	22.56		0.6935		3.07%		0.0050	10.01%
181	Acid Soluble Cd (ppm)	5	4	0.7900	0.6995	0.7375		0.7962	0.4976	107.96%		0.5500	16.75%
190	Water Soluble Cl (1.5%)	7	7	1.029	0.2776	1.029	0.1300	0.3148	0.1190	0.00%	0.00	0.0840	3.87%
191	Acid Soluble Cr (ppm)	4	3	1.961	2.535	2.282		3.004	2.168	131.65%		0.4367	14.13%
202	Acid Soluble Co (ppm)	5	2	5.400	6.857	12.90	4.8700	0.1414	0.1250	1.10%	0.07	1.400	10.89%
221	Acid Soluble Cu (%)	3	2	0.0002	0.0000	0.0002	0.0050	0.0000	0.0000	15.71%	0.02	0.0001	14.16%
241	Acid Soluble Fe (%)	2	2	0.0048	0.0000								
251	Acid Soluble Pb (ppm)	5	4	7.149	7.693	7.936		8.648	5.405	108.96%		0.3725	11.71%
261	Acid Soluble Mn (%)	2	2	0.0006	0.0000								
281	Acid Soluble Hg (ppm)	2	0	1.005	1.407								
289	Acid Soluble Mo (ppm)	3	0	0.5333	0.4041	0.0006	1.0002	0.0000		0.00%	0.00	0.0001	22.00%
291	Acid Soluble Ni (ppm)	5	5	3.056	2.796	3.056		2.796	1.563	91.48%		0.5160	13.52%
301	Acid Soluble Se (ppm)	3	0	3.533	5.600	3.056		2.796		91.48%		0.0400	13.52%
311	Sodium (%)	5	5	0.5790	0.0649	0.5790	0.0629	0.0648	0.0363	11.20%	2.40	0.0860	4.34%
321	Acid Soluble Zn (%)	3	2	0.0003	0.0000	0.0003	0.0050	0.0000	0.0000	0.00%	0.00	0.0001	13.94%

The Analyte IA Ratio = 2.33 * Robust SD / IA at the Analyte Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting. The Horwitz %RSD is calculated using the Thompson Modification, Analyst,2000,125,385-386.



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Sample # 250851

Potassium Select PT Scheme

Labs Reporting: 11

K-Mg-SO4

Lab Values

Issue Date : 09/30/2025

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
050	Soluble K ₂ O (21.5%)	0543	21.09	0.3430	22.00	0.8382	0.2324	13	-1.09	050.52	0
050	Soluble K ₂ O (21.5%)	0531	21.15	0.1000	22.00	0.8382	0.2324	13	-1.02	050.62	0
050	Soluble K ₂ O (21.5%)	0531	21.15	0.1000	22.00	0.8382	0.2324	13	-1.02	050.99	0
050	Soluble K ₂ O (21.5%)	0535	21.15	0.3000	22.00	0.8382	0.2324	13	-1.02	050.99	0
050	Soluble K ₂ O (21.5%)	0535	21.40	0.2000	22.00	0.8382	0.2324	13	-0.72	050.62	0
050	Soluble K ₂ O (21.5%)	0549	21.96	0.3000	22.00	0.8382	0.2324	13	-0.05	050.99	0
050	Soluble K ₂ O (21.5%)	0405	22.14	0.0000	22.00	0.8382	0.2324	13	0.17	050.00	0
050	Soluble K ₂ O (21.5%)	0494	22.26	1.350	22.00	0.8382	0.2324	13	0.30	050.00	0
050	Soluble K ₂ O (21.5%)	0220	22.30	0.0700	22.00	0.8382	0.2324	13	0.35	050.00	0
050	Soluble K ₂ O (21.5%)	0131	22.65	0.0100	22.00	0.8382	0.2324	13	0.77	050.51	0
050	Soluble K ₂ O (21.5%)	0561	22.78	0.0000	22.00	0.8382	0.2324	13	0.93	050.00	0
050	Soluble K ₂ O (21.5%)	0040	22.95	0.5000	22.00	0.8382	0.2324	13	1.13	050.30	0
050	Soluble K ₂ O (21.5%)	0611	23.05	0.1000	22.00	0.8382	0.2324	13	1.25	050.99	0
050	Soluble K ₂ O (21.5%)	0494	23.97±	1.930	22.00	0.8382	0.2324	13	2.34	050.52	1
101	Acid Soluble Ca (%)	0494	0.1050	0.0041	0.3812	0.1883	0.0310	4	-1.47	101.33	0
101	Acid Soluble Ca (%)	0531	0.4300	0.0200	0.3812	0.1883	0.0310	4	0.26	101.01	0
101	Acid Soluble Ca (%)	0531	0.4650	0.0500	0.3812	0.1883	0.0310	4	0.44	101.00	0
101	Acid Soluble Ca (%)	0535	0.5250	0.0500	0.3812	0.1883	0.0310	4	0.76	101.00	0
121	Acid Soluble Mg (10.8%)	0531	9.800†	0.2000	10.95	0.8094	0.1176	9	-1.31	121.01	0
121	Acid Soluble Mg (10.8%)	0531	10.05†	0.3000	10.95	0.8094	0.1176	9	-1.03	121.00	0
121	Acid Soluble Mg (10.8%)	0535	10.60	0.2000	10.95	0.8094	0.1176	9	-0.40	121.00	0
121	Acid Soluble Mg (10.8%)	0405	11.00	0.0000	10.95	0.8094	0.1176	9	0.06	121.32	0
121	Acid Soluble Mg (10.8%)	0561	11.05	0.0900	10.95	0.8094	0.1176	9	0.11	121.33	0
121	Acid Soluble Mg (10.8%)	0040	11.12	0.0500	10.95	0.8094	0.1176	9	0.19	121.33	0
121	Acid Soluble Mg (10.8%)	0220	11.39	0.0400	10.95	0.8094	0.1176	9	0.50	121.30	0
121	Acid Soluble Mg (10.8%)	0494	11.44	0.0200	10.95	0.8094	0.1176	9	0.56	121.33	0
121	Acid Soluble Mg (10.8%)	0543	12.11±	0.0600	10.95	0.8094	0.1176	9	1.32	121.33	0
131	Water Soluble Mg (%)	0531	10.05	0.3000	12.77	4.619	0.3000	3	-0.59	131.99	0
131	Water Soluble Mg (%)	0535	10.15	0.3000	12.77	4.619	0.3000	3	-0.57	131.99	0
131	Water Soluble Mg (%)	0611	18.10	0.0000	12.77	4.619	0.3000	3	1.15	131.99	0
143	Elemental S (%)	0405	0.1250	0.0100				1		143.00	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
145	Sulfate S, HCl soluble (%)	0531	21.70	0.2000	22.28	0.6936	0.1180	5	-0.84	145.00	0
145	Sulfate S, HCl soluble (%)	0531	21.70	0.2000	22.28	0.6936	0.1180	5	-0.84	145.99	0
145	Sulfate S, HCl soluble (%)	0535	21.95	0.1000	22.28	0.6936	0.1180	5	-0.48	145.00	0
145	Sulfate S, HCl soluble (%)	0405	22.92	0.0300	22.28	0.6936	0.1180	5	0.91	145.00	0
145	Sulfate S, HCl soluble (%)	0561	23.14	0.0600	22.28	0.6936	0.1180	5	1.24	145.00	0
148	Total S (22%)	0531	21.70	0.2000	22.56	0.6935	0.1968	13	-1.25	148.01	0
148	Total S (22%)	0531	21.70	0.2000	22.56	0.6935	0.1968	13	-1.25	148.99	0
148	Total S (22%)	0535	22.05	0.1000	22.56	0.6935	0.1968	13	-0.74	148.01	0
148	Total S (22%)	0535	22.10	0.2000	22.56	0.6935	0.1968	13	-0.67	148.99	0
148	Total S (22%)	0131	22.11	0.1400	22.56	0.6935	0.1968	13	-0.65	148.00	0
148	Total S (22%)	0611	22.25	0.1000	22.56	0.6935	0.1968	13	-0.45	148.99	0
148	Total S (22%)	0220	22.79	0.0100	22.56	0.6935	0.1968	13	0.32	148.01	0
148	Total S (22%)	0220	22.82	0.0200	22.56	0.6935	0.1968	13	0.37	148.99	0
148	Total S (22%)	0543	22.91	0.6680	22.56	0.6935	0.1968	13	0.49	148.07	0
148	Total S (22%)	0040	22.95	0.5000	22.56	0.6935	0.1968	13	0.56	148.07	0
148	Total S (22%)	0405	23.04	0.0200	22.56	0.6935	0.1968	13	0.69	148.01	0
148	Total S (22%)	0405	23.40	0.0000	22.56	0.6935	0.1968	13	1.21	148.00	0
148	Total S (22%)	0494	23.52	0.3889	22.56	0.6935	0.1968	13	1.37	148.07	0
151	Acid Soluble As (ppm)	0220	< 0.5					0		151.32	5
151	Acid Soluble As (ppm)	0220	< 0.5					0		151.99	5
151	Acid Soluble As (ppm)	0405	< 3					0		151.32	5
181	Acid Soluble Cd (ppm)	0220	0.0500	0.0000	0.7375	0.7962	0.5500	4	-0.86	181.32	0
181	Acid Soluble Cd (ppm)	0220	0.0500	0.0000	0.7375	0.7962	0.5500	4	-0.86	181.99	0
181	Acid Soluble Cd (ppm)	0531	1.350	0.1000	0.7375	0.7962	0.5500	4	0.77	181.00	0
181	Acid Soluble Cd (ppm)	0535	1.500	1.000	0.7375	0.7962	0.5500	4	0.96	181.00	0
181	Acid Soluble Cd (ppm)	0405	< 1		0.7375	0.7962	0.5500	4		181.32	5
190	Water Soluble Cl (1.5%)	0405	0.7000†	0.0000	1.029	0.3148	0.0840	7	-0.94	190.00	0
190	Water Soluble Cl (1.5%)	0220	0.7100†	0.0200	1.029	0.3148	0.0840	7	-0.91	190.00	0
190	Water Soluble Cl (1.5%)	0561	0.7900†	0.0000	1.029	0.3148	0.0840	7	-0.69	190.00	0
190	Water Soluble Cl (1.5%)	0531	1.250	0.1000	1.029	0.3148	0.0840	7	0.64	190.00	0
190	Water Soluble Cl (1.5%)	0535	1.250	0.1000	1.029	0.3148	0.0840	7	0.64	190.00	0
190	Water Soluble Cl (1.5%)	0531	1.250	0.1000	1.029	0.3148	0.0840	7	0.64	190.99	0
190	Water Soluble Cl (1.5%)	0535	1.250	0.1000	1.029	0.3148	0.0840	7	0.64	190.99	0
191	Acid Soluble Cr (ppm)	0220	0.5250	0.0100	2.282	3.004	0.4367	3	-0.58	191.99	0
191	Acid Soluble Cr (ppm)	0220	0.5700	0.2000	2.282	3.004	0.4367	3	-0.57	191.32	0
191	Acid Soluble Cr (ppm)	0531	5.750	1.100	2.282	3.004	0.4367	3	1.15	191.00	0
191	Acid Soluble Cr (ppm)	0405	< 1		2.282	3.004	0.4367	3		191.32	5
202	Acid Soluble Co (ppm)	0531	12.80	0.8000				2		202.00	0
202	Acid Soluble Co (ppm)	0535	13.00	2.000				2		202.00	0
202	Acid Soluble Co (ppm)	0220	< 0.1					2		202.32	5
202	Acid Soluble Co (ppm)	0220	< 0.1					2		202.99	5
202	Acid Soluble Co (ppm)	0405	< 1					2		202.32	5
221	Acid Soluble Cu (%)	0531	0.0002	0.0000				2		221.00	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
221	Acid Soluble Cu (%)	0535	0.0003	0.0001				2		221.00	0
221	Acid Soluble Cu (%)	0405	< 0.0002					2		221.32	5
241	Acid Soluble Fe (%)	0531	0.0048	0.0005				2		241.00	0
241	Acid Soluble Fe (%)	0535	0.0048	0.0004				2		241.00	0
251	Acid Soluble Pb (ppm)	0220	0.4200	0.1800	7.936	8.648	0.3725	4	-0.87	251.32	0
251	Acid Soluble Pb (ppm)	0220	0.4750	0.0100	7.936	8.648	0.3725	4	-0.86	251.99	0
251	Acid Soluble Pb (ppm)	0531	15.35	0.3000	7.936	8.648	0.3725	4	0.86	251.00	0
251	Acid Soluble Pb (ppm)	0535	15.50	1.000	7.936	8.648	0.3725	4	0.87	251.00	0
251	Acid Soluble Pb (ppm)	0405	< 4		7.936	8.648	0.3725	4		251.32	5
261	Acid Soluble Mn (%)	0531	0.0006	0.0001				2		261.12	0
261	Acid Soluble Mn (%)	0535	0.0006	0.0001				2		261.12	0
281	Acid Soluble Hg (ppm)	0220	< 0.01					0		281.99	5
281	Acid Soluble Hg (ppm)	0405	< 2					0		281.30	5
289	Acid Soluble Mo (ppm)	0220	< 0.3					0		289.32	5
289	Acid Soluble Mo (ppm)	0220	< 0.3					0		289.99	5
289	Acid Soluble Mo (ppm)	0405	< 1					0		289.32	5
291	Acid Soluble Ni (ppm)	0220	0.1200	0.0400	3.056	2.796	0.5160	5	-1.05	291.32	0
291	Acid Soluble Ni (ppm)	0220	0.2100	0.0400	3.056	2.796	0.5160	5	-1.02	291.99	0
291	Acid Soluble Ni (ppm)	0405	3.500	1.000	3.056	2.796	0.5160	5	0.16	291.32	0
291	Acid Soluble Ni (ppm)	0535	5.500	1.000	3.056	2.796	0.5160	5	0.87	291.00	0
291	Acid Soluble Ni (ppm)	0531	5.950	0.5000	3.056	2.796	0.5160	5	1.04	291.00	0
301	Acid Soluble Se (ppm)	0220	< 0.3					0		301.32	5
301	Acid Soluble Se (ppm)	0220	< 0.3					0		301.99	5
301	Acid Soluble Se (ppm)	0405	< 10					0		301.32	5
311	Sodium (%)	0531	0.5500	0.1000	0.5790	0.0648	0.0860	5	-0.45	311.30	0
311	Sodium (%)	0535	0.5500	0.1000	0.5790	0.0648	0.0860	5	-0.45	311.30	0
311	Sodium (%)	0531	0.5500	0.1000	0.5790	0.0648	0.0860	5	-0.45	311.99	0
311	Sodium (%)	0535	0.5500	0.1000	0.5790	0.0648	0.0860	5	-0.45	311.99	0
311	Sodium (%)	0611	0.6950	0.0300	0.5790	0.0648	0.0860	5	1.79	311.99	0
321	Acid Soluble Zn (%)	0531	0.0003	0.0001				2		321.00	0
321	Acid Soluble Zn (%)	0535	0.0003	0.0001				2		321.00	0
321	Acid Soluble Zn (%)	0405	< 0.0003					2		321.32	5

Interpreting Z Scores and Flags:

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated.

Notes:

*Robust statistics not used if < 6 labs used in calculations, in this case Values and Z Scores are grayed out and should be interpreted with extreme caution. Identical duplicates not included in calculation of Rob R-bar. Your offset values are higher (±) or lower (†) than the Robust Analyte value ± Investigational Allowance. Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.