



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 34

Sample # 250451

Potassium Select PT Scheme

Labs Reporting: 11

Soluble Potash

Statistical Summary

Issue Date : 05/31/2025

Method Code	Analyte & Method Sample # 250451	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Horwitz %RSD
050.00	Soluble K ₂ O, STPB Oxalate (60%)	3	3	60.60	0.3087	60.60	1.7860	0.3087	0.2228	0.51%	0.40	0.2167	1.28%
050.30	Soluble K ₂ O, AA (Oxalate) (60%)	2	2	60.82	0.8273								
050.32	Soluble K ₂ O, AA (Citrate-EDTA) (60%)	1		60.40									
050.51	Soluble K ₂ O, ICP (Citrate) (60%)	1		60.25									
050.52	Soluble K ₂ O, ICP (Citrate-EDTA) (60%)	3	3	58.90	2.284	58.90	1.7635	2.284	1.649	3.88%	3.02	0.5043	1.30%
050.99	Soluble K ₂ O, Other (60%)	2	2	60.49	0.6152								
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g samp	1		1.135									
060.99	Water (Free), Other (%)	2	2	0.1365	0.0545								
121.99	Acid Soluble Mg, Other (%)	1		0.0950									
148.99	Total S, Other (%)	1		0.0300									
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	2	0	1.750	1.768								
151.99	Acid Soluble As, Other (ppm)	1		0.5000									
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	2	1	0.6750	0.4596								
181.99	Acid Soluble Cd, Other (ppm)	1		0.3500									
190.00	Water Soluble Cl, Titrimetric (%)	3	3	47.25	1.089	47.25	1.0000	1.089	0.7858	2.30%	2.54	0.0600	1.45%
190.99	Water Soluble Cl, Other (%)	1		48.25									
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	1	0.7150	0.4031								
191.99	Acid Soluble Cr, Other (ppm)	1		0.3950									
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	2	0	0.5500	0.6364								
202.99	Acid Soluble Co, Other (ppm)	1		0.1000									
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	1		0.0002									
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	2	1	2.085	2.708								
251.99	Acid Soluble Pb, Other (ppm)	1		0.2700									
281.30	Acid Soluble Hg, ICP (ppm)	1		2.000									
281.99	Acid Soluble Hg, Other (ppm)	1		0.0100									
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	2	0	0.6500	0.4950								
289.99	Acid Soluble Mo, Other (ppm)	1		0.3000									
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	2	2	0.6225	0.5339								
291.99	Acid Soluble Ni, Other (ppm)	1		0.2650									

Method Code	Analyte & Method Sample # 250451	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Horwitz %RSD
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	2	0	5.150	6.859								
301.99	Acid Soluble Se, Other (ppm)	1		0.3000									
311.00	Sodium, AA (%)	1		1.077									
311.99	Sodium, Other (%)	2	2	1.295	0.0283								
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	1		0.0003									

The Method IA Ratio = $2.33 * \text{Robust SD} / \text{IA at the Method Assigned Value}$. 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.



Method PT For All Labs

Sample # 250451

Soluable Potash

Magruder Fertilizer Proficiency Testing Program

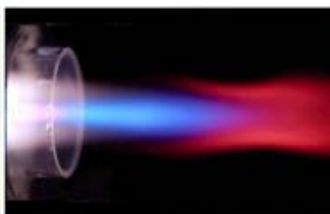
Potassium Select PT Scheme

Method Precision Report

Issue Date : 05/31/2025

Method Code	Analyte & Method	# Tests Submitted	# Tests Used in Precision Calcs	Mean	SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
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Notes: Precision data calculated when 5 or more Tests included.



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 34

Sample # 250451

Potassium Select PT Scheme

Labs Reporting: 11

Soluable Potash

Lab Values

Issue Date : 05/31/2025

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
050.00	Soluble K ₂ O, STPB Oxalate (60%)	0494	60.25	0.5000	60.60	0.3087	0.2167	3	-1.12		0
050.00	Soluble K ₂ O, STPB Oxalate (60%)	0220	60.69	0.0600	60.60	0.3087	0.2167	3	0.31		0
050.00	Soluble K ₂ O, STPB Oxalate (60%)	0405	60.85	0.0900	60.60	0.3087	0.2167	3	0.81		0
050.30	Soluble K ₂ O, AA (Oxalate) (60%)	0309	60.23	0.1000				2			0
050.30	Soluble K ₂ O, AA (Oxalate) (60%)	0040	61.40	0.2000				2			0
050.32	Soluble K ₂ O, AA (Citrate-EDTA) (60%)	0185	60.40	0.3100				1			0
050.51	Soluble K ₂ O, ICP (Citrate) (60%)	0007	60.25	1.100				1			0
050.52	Soluble K ₂ O, ICP (Citrate-EDTA) (60%)	0543	56.29	0.0730	58.90	2.284	0.5043	3	-1.14		0
050.52	Soluble K ₂ O, ICP (Citrate-EDTA) (60%)	0547	59.87	1.130	58.90	2.284	0.5043	3	0.42		0
050.52	Soluble K ₂ O, ICP (Citrate-EDTA) (60%)	0494	60.55	0.3100	58.90	2.284	0.5043	3	0.72		0
050.99	Soluble K ₂ O, Other (60%)	0611	60.05	0.1000				2			0
050.99	Soluble K ₂ O, Other (60%)	0561	60.92	0.1000				2			0
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g sample)	0220	1.135	0.1300				1			0
060.99	Water (Free), Other (%)	0405	0.0980	0.0020				2			0
060.99	Water (Free), Other (%)	0561	0.1750	0.0100				2			0
121.99	Acid Soluble Mg, Other (%)	0611	0.0950	0.0100				1			0
148.99	Total S, Other (%)	0611	0.0300	0.0000				1			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0220	< 0.5					0			5
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	< 3					0			5
151.99	Acid Soluble As, Other (ppm)	0220	< 0.5					0			5
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	0.3500	0.0200				1			0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	< 1					1			5
181.99	Acid Soluble Cd, Other (ppm)	0220	0.3500	0.0200				1			0
190.00	Water Soluble Cl, Titrimetric (%)	0220	46.03	0.0100	47.25	1.089	0.0600	3	-1.13		0
190.00	Water Soluble Cl, Titrimetric (%)	0405	47.64	0.1100	47.25	1.089	0.0600	3	0.35		0
190.00	Water Soluble Cl, Titrimetric (%)	0561	48.10	0.0000	47.25	1.089	0.0600	3	0.78		0
190.99	Water Soluble Cl, Other (%)	0611	48.25	0.1000				1			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	0.4300	0.0400				1			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	< 1					1			5
191.99	Acid Soluble Cr, Other (ppm)	0220	0.3950	0.0500				1			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	< 0.1					0			5

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0405	< 1					0			5
202.99	Acid Soluble Co, Other (ppm)	0220	< 0.1					0			5
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0405	< 0.0002					0			5
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0220	0.1700	0.1400				1			0
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0405	< 4					1			5
251.99	Acid Soluble Pb, Other (ppm)	0220	0.2700	0.0400				1			0
281.30	Acid Soluble Hg, ICP (ppm)	0405	< 2					0			5
281.99	Acid Soluble Hg, Other (ppm)	0220	< 0.01					0			5
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0220	< 0.3					0			5
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	< 1					0			5
289.99	Acid Soluble Mo, Other (ppm)	0220	< 0.3					0			5
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0220	0.2450	0.1100				2			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	1.000	0.0000				2			0
291.99	Acid Soluble Ni, Other (ppm)	0220	0.2650	0.0700				1			0
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0220	< 0.3					0			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0405	< 10					0			5
301.99	Acid Soluble Se, Other (ppm)	0220	< 0.3					0			5
311.00	Sodium, AA (%)	0405	1.077	0.0160				1			0
311.99	Sodium, Other (%)	0611	1.275	0.0100				2			0
311.99	Sodium, Other (%)	0561	1.315	0.0100				2			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0405	< 0.0003					0			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. IA Status describes where your result is relative to the Assigned Value $\pm$ IA. Red indicates Higher or Lower and Green indicates within the IA range about the Robust mean. Method codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for