

Organic Application Note



Nitrogen in Fertilizer

Accessories

502-186 Tin Foil Cups, 501-614 Spatula, 501-441 Sucrose,
502-040 Tin Capsules

Sample Weight

0.05 to 0.10 g

Calibration Standard

502-092 EDTA, Urea, or other suitable standard

Furnace Temperature

950°C

Flow Profile

All High

Atmospheric Blank (N)

~0.04 (solids), 0.00 (liquids)

Crucible Changing Interval

200 to 300 analyses (using 614-961-110 Porous Crucible)

Analysis Time

~170 seconds

AOAC Method #993.13

Nitrogen (Total) in Fertilizers

Procedure

1. Prepare the instrument by following the procedure as outlined in the operator's instruction manual (i.e. check gas supplies, perform any required maintenance, perform leak checks, etc.).
2. Analyze blanks (gas) until a plateau is reached. Analyze three to five additional blanks and set blank using these data.
3. Analyze five EDTA standards (using the 502-186 Tin Foil Cups) and drift correct (if using the PC option). *NOTE: Each method on PC requires prior calibration with multiple weights of EDTA (0.035 to 0.4 g). If PC is not installed, analyze five EDTA standards and calibrate using the DSP screen menu.*
4. **Solid Samples**
 - a. Weigh fertilizer samples into a 502-186 Tin Foil Cup, add 4X sample weight of 501-441 Powdered Sucrose, seal tin foil to avoid trapping air, and analyze.**Liquid Samples**
 - a. Weigh fertilizer into a 502-040 Tin Capsule, add ~0.2 g 501-441 Sucrose. The capsule remains unsealed.
5. Analyze a standard at end of set to verify calibration.



FP-528

Typical Results

Sample	Weight (g)	% Nitrogen
Ammonium	0.0528	35.02
Nitrate	0.0464	34.99
	0.0563	35.04
	Average =	35.02
	Std. Dev. =	0.025
Urea	0.1073	46.69
	0.1028	46.73
	0.1095	46.60
	Average =	46.67
	Std. Dev. =	0.067

Sample	Weight (g)	% Nitrogen
Liquid Fertilizer #1	0.0744	32.01
	0.0635	32.00
	0.0713	32.01
	0.0622	32.00
	Average =	32.01
	Std. Dev. =	0.008
Liquid Fertilizer #2	0.0716	32.03
	0.0674	32.07
	0.0605	32.13
	Average =	32.08
	Std. Dev. =	0.047



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