LACHAT NH_4^+ and $N03^-$ REAGENTS AND STANDARDS FOR SOIL EXTRACTS

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I. $NH4^+$ Reagents

A. Sodium Salicylate - Nitroprusside

Dissolve 300 g sodium salicylate and 2.0 g sodium nitroprusside in 1500 mL of deionized water, then dilute to 2 L.

B. Sodium Hypochlorite,

Dilute 60 mL of bleach (Approximately 5% NAOCl) to 1 L with deionized water.

C. EDTA Solution (60%).

Dissolve 165g $Na_2 \cdot EDTA \cdot 2H_20$ in about 2 L deionized water. Add NAOH pellets (about 60 of them) to pH 7.0 (the solution should be clear at that point). Dilute to 2.5 L.

D. Buffer.

Dissolve 100g $Na_2HP0_4 \cdot 7H_20$ and 56 g NAOH in about 1500 mL deionized water. Dilute to 2 L.

F. Carrier.

Dissolve 300 g KCI in 1.7 L H_20. Bring to 2 L volume.

II. NO_3^- Reagents

F. Ammonium Chloride.

Dissolve 212 g of ammonium chloride and 2.5 g of disodium ethylene diamine tetraacetate in distilled water and dilute to 2.5 L., Adjust to pH 8.5 with concentrated ammonium hydroxide. **Alternatively** for high-iron extracts: Dissolve 6.8 g imidazole in 900 mL. Bring to pH 7.5 using concentrated HCl. Add 1 mL of 2% w/v $CuSO_4 \cdot 5H_2O$ and dilute to 1 L.

G. Color Reagent.

To approximately 1400 mL of deionized water add 200 mL of concentrated phosphoric acid. Add 80 g sulfanilamide and dissolve completely. Dissolve 2.0 g N-1-naphthylethlenediamine dihydrochloride and dilute to 2 L. Store in dark bottle at 12°. Stable for 1 month.

III. Standards

A. Stock Standard: 50 mg NH_4-N / L plus 50 mg NO_3-N / L

Dissolve 0. 1909 g of anhydrous ammonium chloride dried at 105° C 2 h) and 0.36107 g potassium nitrate in 800 mL of carrier. Dilute to 1000 mL. Store in 5° cold room.

B. Working Standards, Set of 7:

Pipette the indicated amount of stock standard into a 50 mL volumetric flask and dilute to volume with carrier.

Standard	µg N mL^{-1}	mL Stock
1	3.000	3.000
2	1.000	1.000
3	0.300	0.300
4	0.100	0.100
5	0.030	0.030
6	0.010	0.010
7	0.005	0.005