

Summary: This method is used for the determination of total nitrogen and crude protein in animal feed. Samples are digested prior to analysis by heating in the presence of the appropriate digestion solution. Free ammonia and organic nitrogen compounds are converted to ammonium ion. The samples are then automatically diluted, dialyzed, and finally reacted with salicylate and hypochlorite in a buffered alkaline solution in the presence of sodium nitroferrocyanide. The salicylic acid analog of indophenol blue is formed, and the absorbance is measured at 660 nm.

Interferences: On-line dialysis eliminates turbidity and background color interferences.

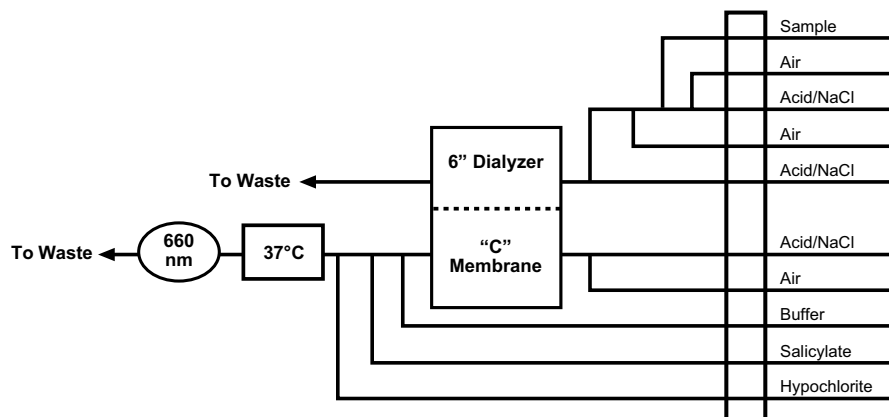
Performance Specifications:

Range:	3.0–150 mg/L Nitrogen
Throughput:	33 samples/hour
Precision:	
50 mg/L	<1% RSD
100 mg/L	<1% RSD
Method Detection Limit (MDL):	1.0 mg/L Nitrogen

Chemicals:

Ammonium Phosphate Dibasic, (NH ₄) ₂ HPO ₄	Sodium Chloride, NaCl
Brij [®] -35, 30% w/v (OI Analytical Part #A21-0110-33)	Sodium Hydroxide, NaOH
Chloroform, CHCl ₃	Sodium Hypochlorite, 5.25% available chlorine (household bleach), NaOCl
Potassium Sodium Tartrate Tetrahydrate, C ₄ H ₄ O ₆ NaK•4H ₂ O	Sodium Nitroferrocyanide Dihydrate, Na ₂ Fe(CN) ₅ NO•2H ₂ O
Salicylic Acid Sodium Salt, C ₇ H ₅ O ₃ Na	Sodium Phosphate Dibasic Heptahydrate, Na ₂ HPO ₄ •7H ₂ O

Basic Flow Diagram:



Selected Reference: Protein (Crude) in Animal Feed, Semi-Automated Method. *Official Methods of Analysis of the Association of Official Analytical Chemists*, 15th ed. Association of Official Analytical Chemists: Arlington, VA, 1990; Method 976.06.

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