

Method Abstract

Summary: Segment the sample and mix with a solution containing diacetyl monoxime and thiosemicarbazide. Add ferric chloride and sulfuric acid and incubate on-line for approximately eight minutes at 95 °C. A chromagen forms between urea and diacetyl monoxime, which becomes intensified by thiosemicarbazide. Measure the absorbance of the complex at 520 nm.

Interferences: No interferences are known.

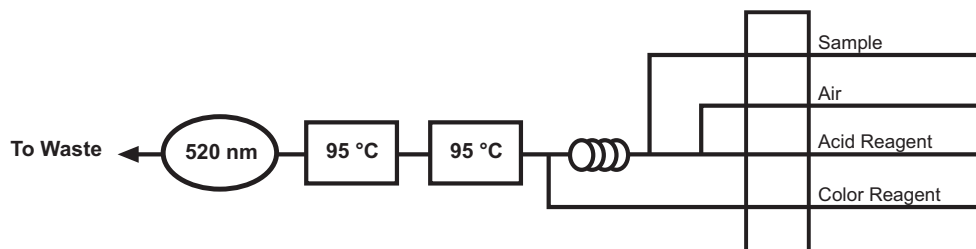
Performance Specifications:

Range	0.01 mg/L–1.0 mg/L
Throughput	45 samples/hour
Precision at 0.05 mg/L	<4% RSD
1.0 mg/L	<3% RSD
Method Detection Limit (MDL)	0.003 mg/L

Chemicals:

Brij®-35, 30% w/v (OI Analytical PN A21-0110-33)	Sulfuric acid, concentrated, H ₂ SO ₄
Diacetyl monoxime, C ₄ H ₇ NO ₂	Thiosemicarbazide, CH ₅ N ₃ S
Ferric chloride, FeCl ₃ •6H ₂ O	Urea, H ₂ NCONH ₂
Phosphoric acid, concentrated, H ₃ PO ₄	

Basic Flow Diagram:



Selected References:

March, W.H.; Fingerhut, B.; Miller, H. Automated and Manual Direct Methods for the Determination of Blood Urea. *Clin. Chem.* **1965**, *11*, 624–627.

Columbe, J.J.; Faureau, L. A New Simple Semimicro Method of Colorimetric Determination of Urea. *Clin. Chem.* **1963**, *9*, 102–108.

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