

Summary: The sample, buffered to pH 5.6, reacts with chloramine-T trihydrate to oxidize bromide to hypobromous acid. Hypobromous acid reacts with fluorescein to form pink eosin (tetrabromofluorescein). The absorbance is measured at 520 nm.

Interferences: Iodine interferes quantitatively. In most water samples, iodine concentration is negligible. For best results, the iodine concentration can be determined separately and subtracted from the apparent bromide concentration determined by this method. The presence of less than 0.50 mg/L cyanide or less than 500 mg/L chloride does not interfere. Reduce chloride interference by adding sodium thiosulfate. Thiocyanate interferes linearly.

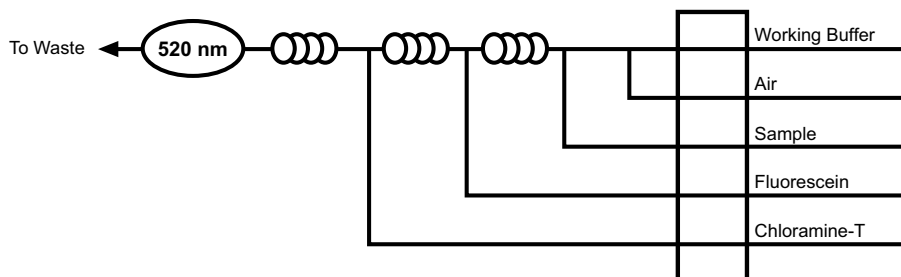
Performance Specifications:

Range:	0.20–10 mg/L
Throughput:	72 samples/hour
Precision:	
0.10 mg/L	<3% RSD
0.50 mg/L	<2% RSD
10 mg/L	<2% RSD
Method Detection Limit (MDL):	0.10 mg/L

Chemicals:

Acetic Acid, glacial, CH ₃ COOH	Fluorescein, C ₂₀ H ₁₀ O ₅ Na ₂
Ammonium Chloride, NH ₄ Cl	Nitric Acid, concentrated, HNO ₃
Brij [®] -35, 30% w/v (OI Analytical Part #A21-0110-33)	Potassium Bromide, KBr
Chloramine-T Trihydrate, CH ₃ C ₆ H ₄ SO ₂ NNaCl•3H ₂ O	Potassium Hydroxide, KOH
	Sodium Hydroxide, NaOH

Basic Flow Diagram:



Selected References: Zitomer, F.; Lambert, J.L. Spectrophotometric Determination of Bromide Ion in Water. *Analytical Chemistry* **1963**, 35 (11), 1731–1734.

Thomas, L.C.; Chamberlin, G.J. *Colorimetric Chem. Anal. Methods*; 9th ed.; Tintometer: England, 1980; 111–112.

Stenger, V.A.; Kolthorf, I.M. The Detection and Colorimetric Estimation of Micro Quantities of Bromide. *J. Amer. Chem. Soc.* **1935**, LVII, 831–833.

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