

IN-LINE SAMPLE PREPARATION AND ANALYSIS

Let Lachat do the Sample Prep ...

with Automated In-Line Sample Preparation and Analysis Modules!



MBAS manifold, with in-line, liquid-liquid extraction.

Sample preparation, although required for many analytes, can significantly decrease laboratory productivity. Even when the analysis of prepared samples is rapid, distillation, digestion or extraction steps prior to analysis is very time consuming.

Flow Injection Analyzers readily lend themselves to sample preparation as well as sample analysis. Lachat offers a suite of in-line sample preparation methods that can easily be added to the QuikChem 8500. Available methods include Total and WAD Cyanide, Total Nitrogen, Total Phosphorous, Total Volatile Phenolics, Sulfide, and MBAS (surfactants). The 2007 and 2012 Method Update Rules for NPDES have expanded allowable methods for reporting to include in many instances in-line sample preparation. Methods for soil extracts and sea/brackish water are also available.

In-line sample preparation provides the following benefits:

- Automates distillations, digestions and solvent extractions
- Significantly improves productivity

- Reduces consumption of sample preparation reagents
- Reduces exposure to corrosive and toxic reagents preparation system is closed
- Increases accuracy and precision with controlled system conditions. %RSD midrange 3% or less
- Simplicity —just place the samples on the autosampler and start the run

PRINCIPLE OF OPERATION

Both samples and standards are treated identically with automated preparation and colorimetric analysis. Preparation and analysis of drinking, waste, and ground water samples can be achieved with greater speed than traditional techniques (90 seconds to 6 minutes per sample or standard), with accurate low level analysis. For specific ranges, method compliance, additional matrices and speed of analysis, please request the method documents*.

*Samples containing settleable Particulates must be filtered prior to analysis.

APPLICATION NOTE: LL016 IN-LINE SAMPLE PREP AND ANALYSIS

Parameter Specifications**:

Parameter	Method	Range	Comments
Ammonia		mg N/L as NH ₃	
	10-107-06-5-J	0.01-1.0; 0.25-20	Salicylate, heater required. Can use for TKN also
	10-107-06-6-A	0.25-20	Salicylate, heater and in-line module required
	10-107-06-6-B 10-107-06-6-E	0.25-10 0.01-0.25	Phenate Phenate
Cyanide		µg CN/L	
Total	10-204-00-2-C	2-100	Pyridine/Barbituric acid. Heater and in-line module required
WAD			
	10-204-00-4-C	2-100	Heater and in-line module required
Kjeldahl Nitrogen (Distillation ONLY)		mg N/L	
	10-107-06-5-J	0.01-5.0; 0.25-20	Salicylate, heater required, can use for ammonia as well
	10-107-06-6-C	0.5-20	Mercury catalyst. In-line module and heater required. Brackish/seawater as well
	10-106-06-6-D	0.5-20	Copper catalyst. In-line module and heater required. Brackish/seawater as well
MBAS		mg/L	
	10-306-00-1-C	0.025-2.0 AS LAS	Methylene Blue. Dual extraction
	10-306-00-1-D	0.01-1.0 as SDS	Methylene Blue, single extraction
	10-306-00-1-F	0.06-2.4 as LAS	Methylene Blue, Dual extraction (SM5540C/ASTM2330-02)
Total Dissolved Nitrogen		mg N/L	
	10-107-04-3-A	200-2000 µg N/L	Alkaline persulfate. Cadmium reduction. In-line module required.
	10-107-04-3-B	0.5-30	Alkaline persulfate. Cadmium reduction. Imidazole buffer. In-line module required.
	10-107-04-3-P	0.2-10	Alkaline persulfate. Cadmium reduction. In-line module required.
Total Dissolved Phosphorous		mg P/L	
	10-115-01-3-A	0.1-10.0	Acidic persulfate. In-line module required
	10-115-01-3-C	0.05-1.0	Acidic persulfate. In-line module required
	10-115-01-3-F	0.002-0.100	Acidic persulfate. In-line module required
Total Recoverable Phenolics			
	10-210-00-3-A	2-200 µg phenol/L	4-aminoantipyrene. Dedicated Channel
	10-210-00-3-C	2-200 µg phenol/L	4-aminoantipyrene. Dedicated Channel (EPA 420.4)
Total Sulfide		mg/L	
	10-116-29-3-A	0.01-2.0	Requires 2 dedicated channels
	10-116-29-3-B	1.0-10.0	Requires 2 dedicated channels

** Not a complete listing. For a complete listing of Lachat In-line methods, visit www.hach.com, LIT 2839.

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