

# QUIKCHEM® 8500 FLOW INJECTION ANALYSIS SYSTEM

*with Integrated IC Option Available*

*A Performance Advantage  
from the Leaders  
in Continuous  
Flow Analysis*



**LACHAT**  
*INSTRUMENTS*  
A Hach Company Brand

# QuikChem<sup>®</sup> 8500 Flow Injection Analysis System

## PROVEN METHOD PERFORMANCE WITH HIGHEST PRODUCTIVITY

Lachat's QuikChem<sup>®</sup> 8500 Flow Injection Analysis System features high sample throughput and simple but rapid method changeover. The QuikChem 8500 maximizes productivity in determining ionic species in a variety of sample types, from sub-ppb to percent concentrations. With over 400 methods for environmental, agronomic and industrial applications, including USEPA accepted methods, the QuikChem 8500 will satisfy all your analytical requirements.

## IMPROVEMENTS SIMPLIFY USE, SPEED ANALYSIS

The QuikChem 8500 has the following benefits:

- *Prepared guaranteed Lachat reagents, for documented USEPA accepted QuikChem methods.*
- *Automatic leak detection/failure alert system—notifies operator when a leak occurs.*
- *Software-controlled heater.*
- *High performance injection valve.*
- *Simplified cable and tubing management.*

## OVER 400 METHOD VARIATIONS AVAILABLE

- *Methods complying with USEPA, ISO, and DIN standards.*
- *Customized method development available.*
- *Simple to run in-line preparation methods.*
- *Refer to [www.lachatinstruments.com](http://www.lachatinstruments.com) to download the most current methods list.*

## MAXIMUM PRODUCTIVITY BASED ON FLOW INJECTION ANALYSIS (FIA)

The QuikChem 8500 utilizes reliable, accurate FIA technology. Scientists trying to process large numbers of samples initially developed FIA when they became frustrated with productivity delays caused by segmented flow analyzers (SFA). These initial innovations became the building blocks of Flow Injection Analysis:

- *Elimination of bubbles from the analytical stream.*
- *Reduction of the inner diameter of the reactor tubing.*
- *Precise injection of samples into the analytical stream.*

The result was an analysis system that produced analytical peaks with very rapid rise and recovery times and provided complete inter-sample washout, preventing carryover between samples. As the technology evolved, many other aspects of FIA were discovered that have become uniquely beneficial to routine analytical laboratories. FIA productivity characteristics include:

- *Fast startup and shutdown (approximately five minutes) times allow for rapid method changeover.*
- *Rapid analysis times (typically 20 to 60 seconds) allow samples to be analyzed in near real-time, while data quality can be monitored and controlled during the analysis.*
- *High sample throughput (typically 60 to 120 samples per hour).*
- *Broad working range (sub-ppb to percents).*
- *Wide dynamic range (typically two to three decades).*

As a result of these characteristics, analysts now enjoy time savings with improved accuracy and quality control.



# *Ion Chromatography— Multiple Determinations from a Single Injection*

The QuikChem 8500 also utilizes ion chromatography (IC). When integrated with FIA or as a standalone instrument, the QuikChem 8500 with IC Option adds the power to profile samples for a class of ionic species. While FIA is ideally suited for processing relatively large numbers of samples for a single analyte per injection, ion chromatography enables the determination of multiple ions from a single injection.

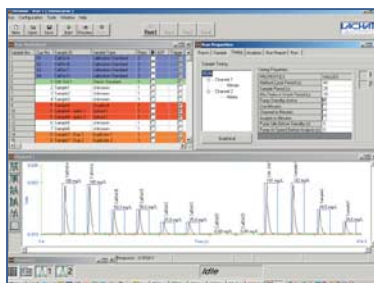
FIA and IC are complementary analytical techniques that are commonly used in the same laboratory. By incorporating both technologies into a single instrument, the following benefits are achieved:

- *Operation of FIA and IC simultaneously and independently on the same instrument platform.*
- *Shared use of several peripherals including sampler, dilutor, sampling pump, and data station.*
- *Uniform operating protocols.*
- *Training and support provided by a single, knowledgeable source.*

## *Improve Operations with QuikChem® 8500-Compatible Products*

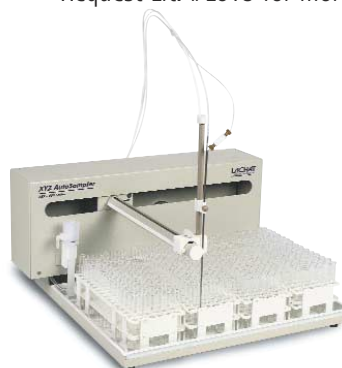
### **OMNION 3.0**

The first software to offer a completely unified computing environment for both flow injection analysis and ion chromatography. Easy-to-use, but tremendously powerful and versatile, Omnion 3.0 significantly improves the operation of the QuikChem 8500 Automated Ion Analyzer. This 32-bit software system is entirely compatible with Windows XP and Windows 2000. To learn more about Omnion 3.0, refer to Lit. #L011.



### **ASX SERIES AUTOSAMPLERS**

To accommodate large sample loads, the ASX-500 Series sampler offers up to 360 sample and 16 bulk standard positions for both calibration and QC standards. The integral wash bath ensures complete washout of the sampling line to prevent inter-sample carryover and cross-contamination. To perform automated ion analysis in quantities of less than 50 samples per batch, analysts choose the ASX-400 Series sampler. Refer to Lit. #L009 for details on these products.



### **PRECISION DILUTOR SYSTEM**

The PDS200 automates the preparation of working standards from a stock standard, estimates the concentration of off-scale samples, performs the required dilution, and re-runs the sample—automatically with no operator intervention. The PDS200 is compatible only with the ASX-500 sampler. Refer to Lit. #L008 for more information.



### **PREPARED REAGENTS**

Save time and money, and ensure the performance of your instruments with Lachat's new Prepared Reagents. Request Lit. #L013 for more information.



## Specifications\*

### Analysis Methods

FIA (Flow Injection Analysis) ; Integrated IC (Ion Chromatography)

### Channel

Max. 4

### Light Source

Tungsten Halogen Lamp

### Detector

Dual beam photometer (340-880 nm)

### A/D Converter

24 bit

### Heating Unit

25-160°C

### Valve

High-performance 6 port injection sample valve

### Filter Type

Interference Filter

### Reagent Pump

12 and 16 positions controlled by S/W.

### Dilutor

Dilution Factor 1.6-4000 steps.

### Accuracy and Reproducibility

0.5%

### Mixing Coil

Teflon Tubing

### Flow Cell

10 mm path length

### Dimensions (Width x depth x height)

4 channel unit= 27.60 x 24.03 x 9.90 in

2 channel unit= 27.60 x 16.01 x 9.90 in

### Peak Measurement

Area/Height

### Tube I.D

0.8mm/0.5mm

### Injected Sample Volume

2µL-250µL

### Sample Throughput

90 tests/hour/channel

### Data Quality Control

Real time closed-loop control of data quality

### Hardware

PC included with system

### Recommended Operating System

Windows XP, 2000, NT

### Software

32-bit Omnion 3.0

Data Quality Management enabled

LIMS import/export capabilities

### Approvals

NORTH AMERICAN STANDARDS

Safety:

UL 61010A-1 and CSA C22.2 No. 1010.1  
by ETL (cETLus safety mark)

EUROPEAN STANDARDS (CE)

Safety:

EN 61010-1 by ITS

EMC:

EN 61326: 98 per 89/336/EEC by  
Hach Company

\*Subject to change without notice.

## Local Distributor:



## For Technical Assistance, Price Information and Ordering

### In the U.S.A.

Call toll-free (800) 247-7613.

### Outside the U.S.A.

Contact the LACHAT office or distributor serving you.

### On the Worldwide Web

[www.lachatinstruments.com](http://www.lachatinstruments.com)

### E-mail for Support

[support@lachatinstruments.com](mailto:support@lachatinstruments.com)

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Lit No. L012  
B42 Printed in U.S.A.  
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