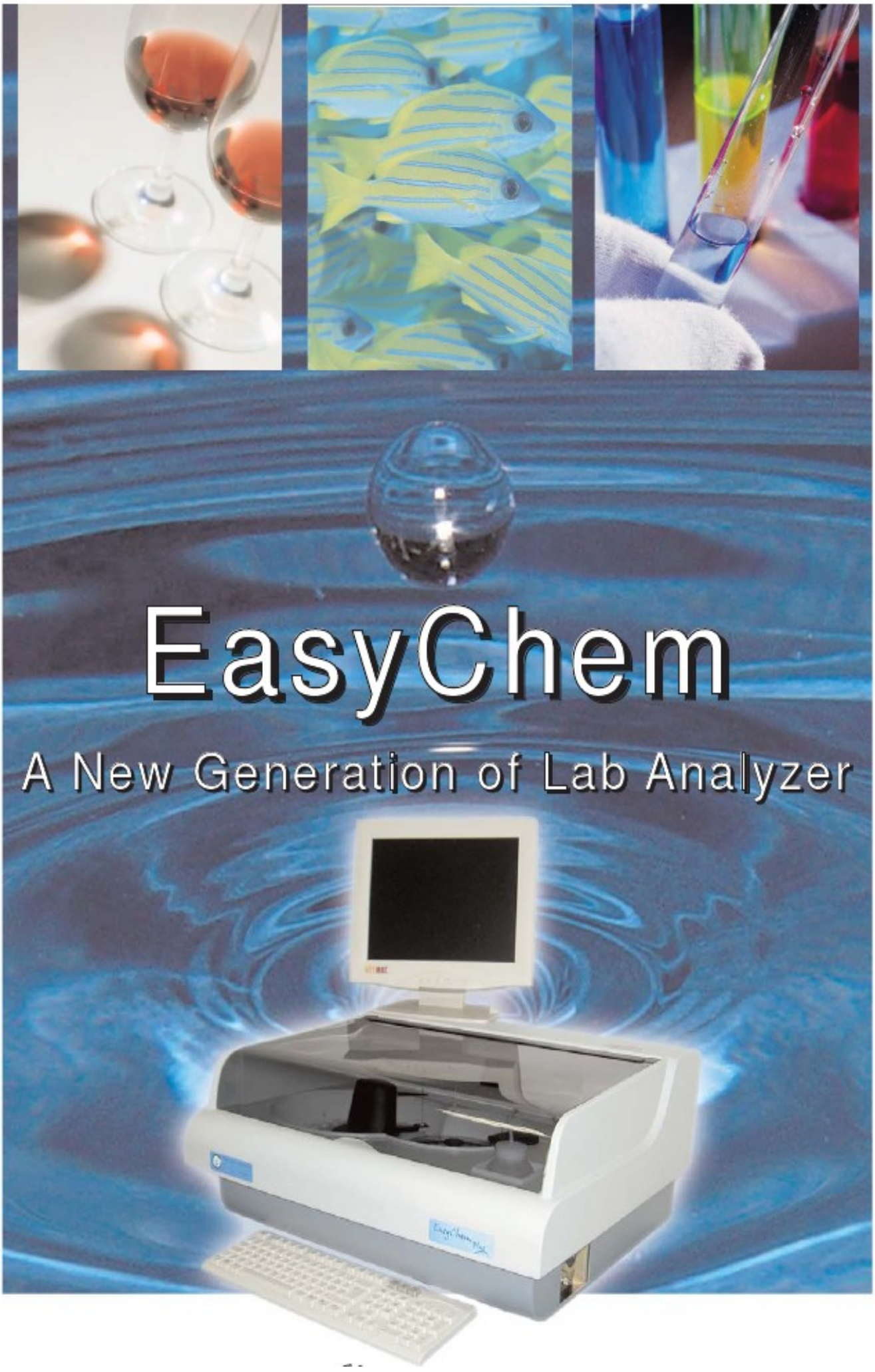
EasyChem
A New Generation of Lab Analyzer

"EASYCHEM"

The New Discrete Analyzer From SYSTEA

Systea - Automated Analyzer for water, wastewater, soil, plant, beverage and industrial samples.

EASYCHEM: Advantages and Benefits

- Easy to use; no specific experience is required.
- Easy run flexibility; individual parameters can be selected for each sample.
- Easy running costs; low reagent consumption, only a few microliters of reagent per sample. Minimal waste generation.
- Easy operation; no hydraulic problems, no reagents or samples continuously pumped into a manifold, no pump tubing, no breaks of air or gas bubbles, no noise, etc.
- Easy preparation of standards from a stock solution.
- Easy automatic pre and post run sample dilution.
- Easy to use windows based software with full user friendly adjustable graphic interface.
- Easy software to operate and learn; short training, specifically designed for chemists.
- Easy maintenance; virtually no consumables or spare parts required.

EASYCHEM: Random Access Analyzer, includes:

- 60 sample capacity tray including blank, standards, samples, controls and free positions for off-scale sample dilution and rerun.
- Up to 18 reagents in a temperature controlled tray.
- 96 reaction cuvettes temperature controlled.
- Colorimeter with a computer controlled filter wheel, for automatic wavelength selection.
- Selectable length flow cells 10, 20, or 40 mm.
- Up to 9 calibrants per method.
- 5 levels of QC per method.
- 20 column thermal diagnostic printer.
- LIMS compatible.

EASYCHEM Discrete Analyzer

EASYCHEM: Data Handling System:

- The Optical Density (O.D.) is processed by the EASYCHEM Windows software on an external PC. The final results are printed in a report containing all relevant information including: sample ID, sample O.D., date, QC values and parameters analyzed. Real time results and O.D. values are visible during the run.

Available methods For Water/Wastewater
Ammonia (N)
Ortho-phosphate (P)
Nitrite (N)
Nitrite+Nitrate (N)
Chloride (Cl^-)
Alkalinity ($CaCO_3$)
Silicate (SiO_2)
Chromium VI
Phenol
Cyanide
Iron (soluble)
Hardness
TKN
Total Phosphorous
Sulfate

SAMPLE TRAY

The Sample Tray is located in the center of the working area; 60 samples, standards or controls can be easily inserted in the proper positions, identified by a progressive number. Positions can be reserved for off-scale dilutions and are identified by a red line. The sample tray is easily removed for loading and unloading of samples.

REAGENT TRAY

The Reagent Tray can contain up to 18 reagents, temperature controlled for stability by a Peltier, which is located in the left side of the working area. A computer controlled needle, connected to a high precision micro syringe, allows for sample and reagent pickup. The needle also senses reagent levels.

REACTION CUVETTES

The Reaction Cuvettes are located around the Sample Tray. A computer controlled needle connected to a high precision micro syringe, picks up the sample and the reagents. After preheating, in a coil positioned in the body of the needle arm, they are inserted into a reaction cuvette that is temperature controlled up to 50°C. A proper wash cycle between samples ensures that there is no carry-over from the previous sample. Possible carry-over can be measured and corrected via the software.

COLORIMETER

As soon as the analysis program is complete, a second needle connected to a peristaltic pump is activated. The needle is inserted into the cuvette. The sample is then pumped into a temperature controlled flow cell, where the O.D. is detected by a colorimeter, which automatically selects the right wavelength. A proper flow cell wash cycle ensures that there is no carry-over from the previous sample. Optional flow cell lengths are available for greater resolution.

Technical Specifications

Sample Tray
- 60 free positions for blank, samples, standards, controls and off-scale dilutions

Reagents Tray
- 18 Positions

Throughput
- 50 to 120 tests per hour

Reading Methods
- End Point
- Differential
- Kinetic

Calibrations
- From 1 up to 9 standards, or against a stored factor
- Linear Regression
- Polynomial

Optical Group
- 6V/10W Halogen lamp with extended UV emission
- 8 Interference Filters +/-2 nm
- Automatic zero setting for all wavelengths
- Accuracy +/- 1% from 0 to 2.5 O.D.
- Linearity better than 0.5%
- Noise <+/- 2m Abs. at 340 nm 2.5 O.D.
- Microflow cell 35 microliters internal volume (Standard)
- Temperature controlled by Peltier programmable +/- 0.1°C
- Aspiration by peristaltic pump, programmable

Diluter Module
- 1000 microliter syringe with 3 ul resolution
- Zero automatic
- Self-adjustment of mechanical tolerance

Reaction Plate
- 96 reaction cuvettes with incubation temperature programmable +/- 0.1°C

Hardware
- External computer with self-test programs coded in Eproms

Software
- Samples analysis: independent list of parameters can be selected for each sample and stored in a non-volatile memory
- 3 levels of security
- Automatic pre-run sample dilution
- Automatic post-run off-scale dilution
- Automatic preparation of calibrants from a stock solution
- Data reprocessing
- QC charts
- Sample ID: Alphanumeric
- Self-Diagnosis: Included
- Analysis Batch: Self-Optimized

Systea EasyChem Software

EasyChem software was specially created for Windows 98 and higher platforms and is written and supported by Systea.

Easy to use

Setting up a run is easy, the user simply clicks the work list icon or menu and selects colored symbols for each type of standard, QC, or sample. The operator then chooses, which analysis will be performed on the work list, by selecting a predefined method. Multiple methods can be selected for each sample, standard, or QC. Pre-run dilutions can be selected on specific samples, and standards can be automatically prepared from a stock solution. Automatic dilution and re-run of off-scale samples can also be selected. The operator can include in the work list: gain, drift, and carry-over correction, if desired. Usual combinations of methods can be pre-defined as "profiles" in the software setup, for ultra-fast startup on a routine basis. Once the work list is complete, the operator simply "clicks" to start the run; EasyChem does the rest. During the run, real time sample results, calibration correlation, and system functions are displayed to inform the operator.

QC Controls

Up to five levels of real time QC's can be used. QC results are automatically stored and plotted in a user defined QC chart. In case of QC failure, the analyzer can stop the run or simply notify the operator, flag the QC result, and go on. After the run, EasyChem software shows the limits for the QC standards and prints a symbol to show at a glance, whether each passed or failed.

LIMS Connection

Data can be transferred to an internal or network drive at the end of the run in a Text or ASCII format. Sample IDs can be imported from a central computer. EasyChem software is compatible with all windows supported networks.