

SPE-04+ 4-Channel 40-Sample SPE System

A High Throughput and Versatile Cleanup Platform

About PromoChrom

PromoChrom Technologies focuses on the development of sample preparation solutions for trace analysis. In 2011, PromoChrom developed the flow-path-integration technique for liquid handling. It combines various switching valves into one liquid handling module. The technique simplified the structure of our instruments considerably, making the instruments more affordable and more reliable.

SPE-04+ 4-channel 40-sample solid phase extraction system is a flexible and versatile platform for automatic sample cleanup. It can be used for analysis of pollutants in large volume water samples, drugs in blood and urine, pesticide and drug residues in food, and pollutants in soil. Thanks to our unique flow path integration technique, this high throughput system can meet the needs of most challenging sample cleanup requirements while maintaining a simple and robust structure and a very small footprint.

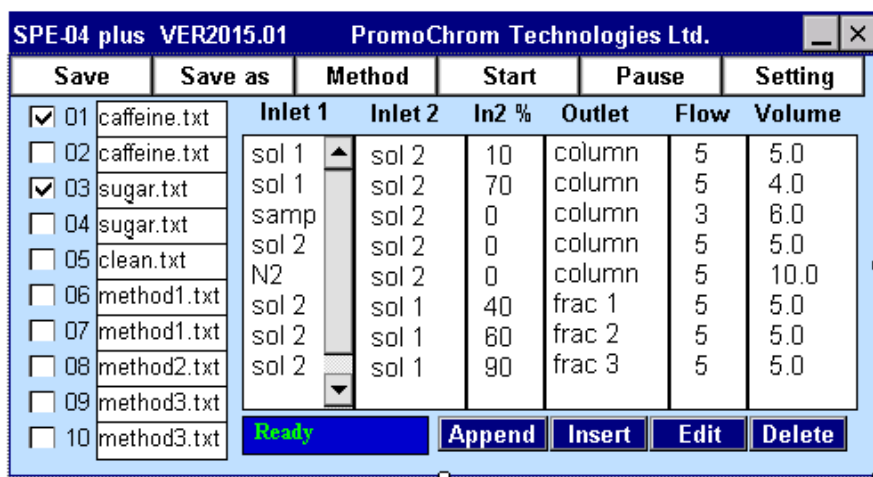


Features

Easy operation

SPE-04+ uses a built-in touch screen computer for instrument control. There is no need for another computer. Building methods and setting instrument configuration are easy and fast. Routine operation procedures are straight forward: 1) place samples, SPE columns, and collection tubes; 2) select suitable methods from a method list; 3) press “Start” button. SPE-04+ will process 40 samples in 10 batches of 4. Making it four times as fast as a single-channel system.

Below is the user interface of SPE-04+. Forty samples are divided into 10 groups. Each group can use their own methods. A method includes many command lines. Each line will tell the syringe pump where to get the liquid and where to deliver. For example, the first command line of the method given in the picture will tell the instrument to draw 4.5 mL solvent 1 and 0.5 mL solvent 2 and mix them, then push the liquid to column at a 5 mL/min flow rate.



Online blending and gradient elution

SPE-04+ can mix two types of solvent at any ratio before delivering it to column. This feature can be used to do stepped gradient elution (note: this is not a continuous gradient elution like an HPLC pump). It is useful in method development for selecting suitable elution solvents or for some complex separation. It can also save routine efforts in making mixed solutions.

Blockage detection and smart handling

The instrument can detect the blockage on the columns. When the resistance increases for solvent push, the pump will reduce the flow rate by half so that the work can still go on smoothly. Only when the resistance is too high, the instrument will enter a pause stage to allow the user to step in.

Versatile application

SPE-04+ has two sample handling modes: normal volume modes and large volume modes. Large volume mode can be used to extract large volume water samples. In this mode, 4 samples with volumes up to 2 liters can be processed.

Small footprint and simple structure

This 4-channel SPE system weighs only 14 KG. Its dimension is 34x34x46 cm. The top of the instrument is used to hold the elution solvents. It can be easily placed in a fume hood or be moved around. Since many components for liquid handling are integrated into one module, the instrument has a very simple structure, making it easy to maintain and stable in operation.

Special design to avoid cross contamination

The instrument has a built-in wash procedure. It makes sure that all the tubing and syringe pump with sample contact are thoroughly washed before a sample run starts. There is no need to build a method for needle wash.

Specifications

Sample capacity	40 per batch
Number of channels	4
Maximum sample volume	9 or 2000 mL
Material of wetted parts	Teflon, stainless steel, Pyrex glass
System control	Built-in touch screen computer
Type of elution solvents	6, any two can be mixed online
Fraction collection	Up to 10 fractions per sample. Max volume 8 mL per fraction (16X100mm test tube)
Pump flow rate	1 to 30 mL/min
Pressure limit of pump	6 bar
Pump reproducibility (C.V.%)	<1.5
Major functions	Column elution, load sample, fraction collection, nitrogen drying, needle and pump wash.
Power supply	24 VDC
Current	< 1 A
Weight	14 Kg
Dimension (cm)	34 x 42 x 35 cm (width x depth x height)

Order information

Part No.	Description
SPE-04P-01	Includes SPE-04+ mainframe, 24V power supply, and user manual



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