From Sample to Vial

Automated Sample Prep Solutions

FMS
Fluid Management Systems

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Extraction Systems

Solid Samples

Liquid Samples

Sample Clean-Up Systems

Concentration/Evaporation/Solvent Recovery Systems

Extraction - Clean-up - Concentration

Improving Laboratory Productivity While Reducing Costs

Founded in 1985, Fluid Management Systems, Inc. headquartered in Watertown, MA USA designs, manufactures, and supports analytical instruments used by scientists to perform extraction, cleanup, fractionation and concentration of samples prior to chemical analysis. Some of the industries that rely on our sample preparation systems are Agricultural, Chemical, Environmental, Food, Life Sciences and Pharmaceutical.

Automated sample preparation systems from FMS are designed to replace outdated, labor-intensive techniques that hinder laboratory productivity. Our Total Sample Preparation systems improve the efficiency of both laboratory personnel and expensive instrumentation. Our automated sample preparation systems allow laboratory personnel to reduce costs, shorten sample turnaround time and improve the quality and consistency of their results by eliminating the variability inherent with manual sample preparation methods.

We support our sample preparation systems with an ever increasing network of field sales, service, and applications expertise. FMS systems are sold worldwide by direct sales force, independent representatives, and distributors. After 29 years in business, FMS has established itself as the world leader in providing automated sample preparation systems in the field of Persistent Organic Pollutants (POPs) analysis.

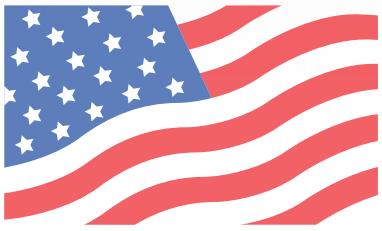
FMS
Fluid Management Systems

Guaranteed Quality Products and Consumables

Our Manufacturing/Clean room

FMS proudly designs and manufactures all of its products in the United States of America. Within our 125,000 sq. foot facility is a 25,000 sq. foot custom high speed CNC lathe and milling shop that quickly manufactures parts and prototypes for FMS automated sample prep systems. Our manufacturing assembly, quality control and R&D occupy 35,000 sq. ft. and 30,000 sq. ft. is dedicated to our laboratories. This allows FMS to have greater control over its quality process and ability to deliver quality products.

FMS manufactures all of its consumables in 1,000 class clean room environments. The clean room manufacturing facility delivers guaranteed contaminant free products. This is critical for laboratories performing analytical testing and even more mission critical to those performing trace analysis with high resolution mass spectrometry (HRMS). Each lot is controlled and tested by the ISO 17025 accredited laboratory. FMS offers its customers the ability to order their consumables from one lot. This allows the laboratory to reduce costs of qualifying new consumables multiple times in a project or time period. Prepackaged consumables eliminate the possibility of outside contamination of the consumable cartridges or columns used in sample preparation.



Made in USA

We understand what you have to do

We're experts in POPs analysis, equipped with advanced automation, accredited in ISO 17025 to provide you with faster and less costly quality results.

The laboratory is ISO 17025 accredited providing high quality analytical testing of Persistent Organic Pollutants (POPs). Our applications laboratory focus is POPs and other emerging contaminants. The laboratory uses the power of advanced analytical instrumentation combined with automated sample preparation to create the world's fastest, lowest cost, highest quality solutions for testing results focusing on the following compounds:

- **Dioxin** and dioxin like compounds
- **PCBs** - PolyChlorinated Biphenyls
- **PAHs** - Polyaromatic Hydrocarbons
- **PBDEs** - PolyBrominated Biphenyl Ethers
- **PFCs** - PerFluorinated Compounds
- **OCPs** - OrganoChlorine Pesticides

All FMS products are tested and certified by the ISO 17025 laboratory

The laboratory located in Watertown, Massachusetts occupies a 30,000 square foot space. The laboratory has tapped into 30 years of expertise in advanced sample preparation and automation, making our lab one of the most advanced in the world. Our lab utilizes fully automated sample preparation instrumentation, high resolution mass spectrometers (HRGC/HRMS), Triple Quad GC/MS, Single Quad GC/MS, Triple Quad UPLC, UPLC, HPLC and GC to demonstrate, quality results, faster turnaround, and lower cost to perform analysis of a variety of matrices in many market segments including:

- **Biological Samples**
  Whole Blood, Blood Serum, Breast Milk, Urine
- **Food & Feed Samples**
  Fish, Shell Fish, Meat, Feed, Tissue
- **Environmental Samples**
  Soil, Air, Sediments, Building products, Fly ash
- **Water Samples**
  Drinking water, Ground Water, Waste Water
- **Pharmaceutical**
  Drug development

FMS
Fluid Management Systems

PLE®
Automated High Speed Pressurized Liquid Extraction

PLE® is a high speed Pressurized Liquid Extraction system, designed to perform the extraction of multiple samples simultaneously in minutes rather than hours, producing high recoveries and excellent precision for all analytes. Very inexpensive stainless steel extraction cells and end cap filtration keep the operational cost at a minimum. The optional disposable end cap filtration increases productivity and saves valuable time.

More efficient and cost effective than traditional processing methods.

The PLE is a modular system that can grow with your laboratory

The PLE is expandable from one to six modules to meet your laboratories needs as it grows

One Step Extraction & Clean-up
Optional Incell Cleanup allows for the entire extraction and clean-up process to happen in one step. Thereby, increasing speed & reducing the cost of sample prep.

Extraction Cell Size 5 - 150ml
Run small to large sample sizes with the same basic system.

Modular, Expandable & Affordable
With the modular PLE design, one can purchase a 1 sample system at a very affordable price. The system can be expanded to a 6 sample system as the laboratory's workload grows.

Reduces Operating Cost
Rapid extraction & clean-up, along with reduced solvent use and waste, it reduces operating costs by as much as 70 percent.

Increases Productivity
The entire extraction & clean-up may be performed in less than 30 minutes. Traditional methods could take 10 - 16 hours.

Reduces Solvent Waste
PLE reduces solvent waste through efficient use of solvents.

Reduces Solvent Cost
Uses as little as 15ml of solvent as compared to more than 500ml of solvent required to perform Soxhlet extractions.

Applications
Solid and Semi Solid Material, Food and Feed, Packaging Materials

Supports EPA Methods

Method 3545A	Semi Volatiles, Organophosphorous Pesticides, Organochlorine Pesti cides, Chlorinated Herbicides, PCBs,PCDDs/PCDFs, DRO
Method 1613	Dioxin and Furans
Method 1668	Chlorinated Biphenyl Congeners
SW-846	Methods for Solid Waste

FMS
Fluid Management Systems

5 to 150ml Extraction Cell Sizes
PLE offers 5 - 150ml low cost stainless steel extraction cells with Teflon end cap filtration. This wide range of extraction cells allows the use of the same unit for all sample sizes, even in the same run

Cross Contamination Free
Optional low cost extraction cell sizes and Teflon end caps filtration ensure trouble free extraction with no cross contamination.

Automatic Operation & Documentation
Real time software allows 6 channels of pressure and 6 channels of temperature data to be plotted simultaneously. This powerful feature allows automatic documentation of the entire extraction data. The temperature and pressure data can be superimposed and printed in graphic or tabular format and stored for future reference.

Patented One-Step Extraction & Clean-up
The PLE patented one step extraction and clean-up design has the flexibility to perform extraction as well as clean-up in one run. Depending on the sample size and the extent of clean-up, three configurations are available.

In-line Column Clean-up
An optional In-line clean-up module allows additional clean-up columns to be added to the output of extraction cells for cleaning the sample prior to GC/MS analysis. This powerful feature of PLE saves time and money while producing excellent recoveries and precise results for all analytes. FMS offers a wide variety of disposable Teflon columns from 0.25 to 50 grams capacity.

Column Clean-up With PLE system, the entire extraction and clean-up can be done in one step using packing material such as silica and carbon.
This feature allows for rapid extraction and cleanup all in one step.

PLE/Power-Prep Dual Extraction & Clean-up System
The Dual PLE/PowerPrep consists of two systems in one economical package and is truly the new frontier in rapid sample preparation for POPs analysis. The system can be used to perform extraction, clean-up or both extraction and clean-up. The modular and compact design of the systems enable the user to expand from one to six modules. The user can therefore, start off with a single sample system and expand up to a six module system as throughput demand increases.

Complete Control & Monitoring by PC
The DMS-6000 Editor allows multiple methods to be stored. In each method parameters such as time, solvent, volume and final temperature can be set for each step. Pressure and temperature as well as dispensed volumes are displayed every second and stored for future reference. Six channels of pressure and six channels of temperature are also be plotted in real time. This powerful feature allows automatic documentation of the entire extraction data.

Multiple Extraction
Programming of variable pressure and temperature allows extraction of a variety of different compounds.

A Versatile Method Development Tool
The powerful DMS 6000 real time software along with a large variety of extraction cell capacities and the ability to select multiple solvents, different temperature settings, as well as storage of data makes the PLE the perfect development tool.

Leak & Clog Free Operation
Simple design along with large bore plumbing enables the PLE to operate virtually leak and clog free.

Modular Construction Provides for Easy Maintenance
The PLE modular units as well as exposed plumbing construction makes for efficient system maintenance. The PLE module is designed to operate independently, should one module fail the others will continue to perform. This versatility ensures ease of replacement with no down time.

Multiple Method Storage
The entire extraction process is PC controlled allowing the laboratory technician to store and edit extraction protocols, as well as monitor and store extraction data.

Specifications

Dimensions:

PLE1 = 15” (38 cm) W X 35” (90 cm) H X 18” (45 cm) D
PLE2 = 23” (58 cm) W X 35” (90 cm) H X 18” (45 cm) D
PLE3 = 31” (78 cm) W X 35” (90 cm) H X 18” (45 cm) D
PLE4 = 39” (98 cm) W X 35” (90 cm) H X 18” (45 cm) D
PLE5 = 47” (118 cm) W X 35” (90 cm) H X 18” (45 cm) D
PLE6 = 55” (138 cm) W X 35” (90 cm) H X 18” (45 cm) D

Ordering Information

PLE Extraction Cells

Part number	Description
PLE-ECEL-SS20	20ml stainless steel extraction cell
PLE-ECEL-SS40	40ml stainless steel extraction cell
PLE-ECEL-SS100	100ml stainless steel extraction cell

PLE Filtration Caps

Part number	Description
PLE-FLT-TEF-OAR	Teflon End cap filtration with o-ring for 100,40,20,10, 5ml cell
PLE-FLT-100M-TEF	Teflon, End cap filtration for 100, 40, 20, 10, 5ml cell
PLE-FLT-100M-SS	Stainless steel Reusable End cap filtration for 100,40 20, 10, 5ml cell

PLE Extraction Cell and Cap

Part number	Description
PLE-CAR100-FLT10	100ml stainless steel extraction cell with two end cap filtration
PLE-CAR40-FLT10	40ml stainless steel extraction cell with two end cap filtration
PLE-CAR20-FLT10	20ml stainless steel extraction cell with two end cap filtration

PLE System Configurations

Part Number	Description
PLE 1	Modular one sample extraction system. This system Processes one sample
PLE 2	Modular two sample extraction system. This system Processes two samples simultaneously
PLE 3	Modular three sample extraction system. This system Processes three samples simultaneously
PLE 4	Modular four sample extraction system. This system Processes four samples simultaneously
PLE 5	Modular five sample extraction system. This system Processes five samples simultaneously
PLE 6	Modular six sample extraction system. This system Processes six samples simultaneously

PLE Accessories

Part number	Description
PLE-HTB-SM	Small Heater blocks for 5 - 40ml extraction cell
PLE-HTB-MD	Medium Heater block for 100ml extraction cell
PLE-HTB-LG	Large Heater block for 250ml extraction cell

PLE Modules

Part number	Description
PLE-CNT-MD	PLE Control module
PLE-HPR-MD	High Pressure pump module
PLE-SMP-MD	Sample processing module
PLE-COL-MD	Column module

Portable Cart & Spill Tray

Part number	Description
SPILL-TRY	Spill Tray
PORT-CRT	Portable Cart

Consumables

Part number	Description
PLE-CAR-SS05	5ml Stainless Steel Cartridge
PLE-CAR-SS10	10ml Stainless Steel Cartridge
PLE-CAR-SS100	100ml Stainless Steel Cartridge
PLE-CAR-SS20	20ml Stainless Steel Cartridge
PLE-CAR-SS40	40ml Stainless Steel Cartridge
PLE-FLT-100M-SS	Reusable End cap filtration for 100, 40, 20, 10, 5ml cell - Stainless steel
PLE-FLT-100M-SS-NP	Reusable End Cap Filtration for 100, 40, 20, 10, 5ml Cell - Stainless Steel Non-Polar
PLE-FLT-100M-SS-P	Reusable End Cap Filtration for 100, 40, 20, 10, 5ml Cell - Stainless Steel Polar
PLE-FLT-100M-SS-U	Reusable End Cap Filtration for 100, 40, 20, 10, 5ml Cell - Stainless Steel Universal
PLE-FLT-100M-TEF-NP	Teflon Cap Filtration for 100, 40m 20, 10, 5ml Cell Non Polar
PLE-FLT-100M-TEF-P	Teflon Cap Filtration for 100, 40m 20, 10, 5ml Cell Polar
PLE-FLT-100M-TEF-U	Teflon Cap Filtration for 100, 40m 20, 10, 5ml Cell Universal
PLE-FLT-INCL3-NP	Non-Polar In Cell Cleanup End Cap 3 gm capacity
PLE-FLT-INCL3-P	Polar In Cell Cleanup End Cap 3 gm capacity
PLE-FLT-INCL3-U	Universal In Cell Cleanup End Cap 3 gm capacity
PLE-FLT-INCL6-NP	Non-Polar In Cell Cleanup End Cap 6 gm capacity
PLE-FLT-INCL6-P	Polar In Cell Cleanup End Cap 6 gm capacity
PLE-FLT-TEF	Teflon Cap Filtration for 100, 40m 20, 10, 5ml

Consumables (contd.)

Part number	Description
PLE-FLT-INCL6-U	Universal In Cell Cleanup End Cap 6 gm capacity
PLE-OR-ETP-ST	Viton ETP (Universal) Orings Set: 014, 017, 116
PLE-OR-NEO-ST	Neoprene (Polar) Orings Set: 014, 017, 116
PLE-OR-VIT-ST	Viton (Non-Polar) Orings Set: 014, 017, 116
PLE-SS-CAP-100M	Reusable End Cap Fitting Body for 100, 40, 20, 10, 5ml Cell
PLE-SS-FLT-10	Stainless Steel Filter
PLE-SS-RET	Retaining Ring

EconoTrace® Parallel SPE System

The EconoTrace Parallel SPE System is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The EconoTrace Parallel SPE system automates existing manual SPE techniques and replaces older manual Liquid-Liquid Extraction techniques and outdated semi-automated instruments.

The EconoTrace Parallel SPE system is the only SPE system that combines extraction, drying and concentration into one step – providing a truly automated total sample prep solution for the laboratory. Simply load samples onto the EconoTrace Parallel SPE system and trigger the automated extraction process. After loading the sample onto the SPE cartridge at the programmed flow rate, the drying step is accomplished using Nitrogen. This drying step replaces manual techniques. The analytes of interest are then eluted directly to the SuperVap Concentrator where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis. Automating these processes into one step ensures the highest quality results in the shortest amount of time and eliminates both human error and the possibility of contamination.

The EconoTrace runs two samples per module in parallel. It is expandable from one to four modules to grow with your laboratory giving you up to 8 extractions simultaneously.

Reduces Errors and Costs
One-step automated SPE and concentration eliminates human error, saves labor costs and reduces solvent usage while increasing your sample throughput.

Fully Automated
Hyphenates the entire sample prep process– extraction, drying and concentration steps into a one process.

Runs up to eight samples simultaneously.

Automatic sample bottle rinse.

Concentrates samples up to 250ml directly to a GC vial.

High Speed
The fastest automated sample processing available for SPE cartridges and columns of all sizes.

Runs up to eight samples simultaneously.

Positive pressure pumping for fast, simultaneous loading of samples.

Applications
Drinking Water

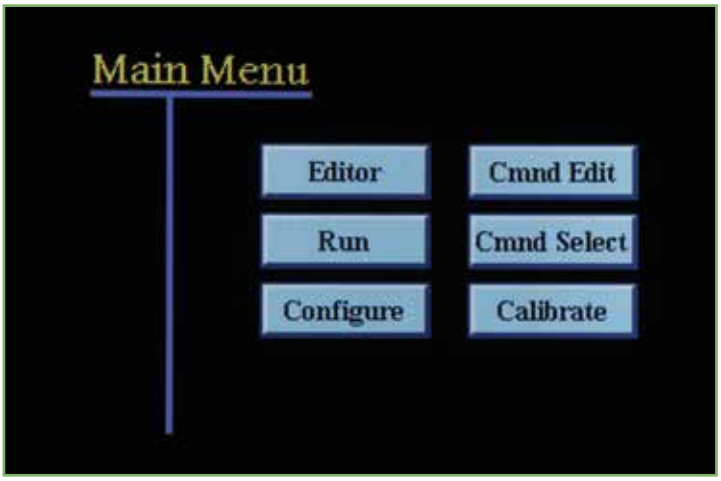
Supports EPA Methods

506	Phthalates and Adipate Esters
508.1	Chlorinated Pesticides, Herbicides, and Organohalides
515.2	Chlorinated Acids
521	Nitrosamines
525.2	Semi-volatiles
526	Semi-volatiles
527	Selected Pesticides and Flame Retardants
528	Phenols
529	Explosives
532	Phenylurea Compounds
535	Chloroacetanilide and other Acetamide Herbicides
548.1	Endothall
549.2	Diquat and Paraquat
550.1	PAH's
552.1	Haloacetic Acids and Dalapon
553	Benzidines and Nitrogen Containing Pesticides

High Throughput Solid Phase Extraction for Drinking Water, Beverages, Urine and Blood

The EconoTrace Parallel SPE system uses positive pressure pumping for precise and accurate delivery of the sample as well as conditioning, washing and elution solvents. The system is specifically designed to isolate analytes of interest from a wide variety of liquid matrices such as urine, blood, water, milk, and beverages. Sample sizes range from 2ml to Liters and uses the same bottle the sample was collected in. Sample loading rates are programmable. A positive pressure pump is used to load samples onto any SPE cartridge or column available on the market and it easily handles both clean and tough sample matrices.

The EconoTrace Parallel SPE/SuperVap system concentrates samples up to 250ml directly to a GC vial. For guaranteed results, especially when dealing with low limits of detection, we recommend using FMS cartridges. Sample Processing Modules can easily be replaced for service which means your lab will experience zero downtime.



System control is accomplished via an easy-to-use touch screen.

The EconoTrace System is expandable from one to four modules

The SuperVap® Concentrator is where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis.

Automatic time-based or endpoint detection for nitrogen shut off for each vessel

Measurements - Concentration / Evaporation vessels in 500 µL, 1ml, and direct to a GC Vial or to dryness.

Specifications

Dimensions: 15” W x 18” D x 35” H
Weight: 65 lbs.
Gas Requirements: Nitrogen - 20 PSI minimum
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: Integrated Touch Screen Control

Ordering Information

Part number	Description
EconoTrace/1	EconoTrace SPE system for 2 samples (1 Module)
EconoTrace/2	EconoTrace SPE system for 4 samples (2 Modules)
EconoTrace/3	EconoTrace SPE system for 6 samples (3 Modules)
EconoTrace/4	EconoTrace SPE system for 8 samples (4 Modules)
ECONO-EXP	EconoTrace Expansion Module

Consumables

Part number	Description
SPE-ADP-1	SPE 1ml Cartridge Adapter
SPE-ADP-20	SPE 20ml Cartridge Adapter
SPE-ADP-3	SPE 3ml Cartridge Adapter
SPE-ADP-6	SPE 6ml Cartridge Adapter
SPE-BT.5L	SPE Sample Bottle 500ml
SPE-BT1	SPE Sample Bottle 1L
SPE-BT1.25L	SPE Sample Bottle 1250ml
SPE-BTRC	SPE Sample Bottle Rinse Cap
SPE-CAP-1L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 1L
SPE-CAP-2L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 2L
SPE-CAR1-C18	SPE Cartridge 1 gram C18
SPE-CAR1-DVB	SPE Cartridge 1 gram DVB
SPE-CAR5-C18	SPE Cartridge 5 gram C18
SPE-CAR6-DVB	SPE Cartridge 6 gram DVB

SPE Accessories

Part number	Description
SPE-CART-TRY	SPE Portable Cart and Tray

TurboTrace® Parallel SPE System

The TurboTrace Parallel SPE system is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. It is designed for high throughput and tough sample matrices. The TurboTrace Parallel SPE system automates existing manual SPE techniques and replaces older manual Liquid-Liquid Extraction techniques and outdated semi-automated instruments.

The TurboTrace Parallel SPE system combines extraction, drying and concentration into one step -- providing a truly automated total sample prep solution for the laboratory. Simply load samples onto the TurboTrace Parallel SPE system, use the touch screen to trigger the automated extraction process. After loading the sample onto the SPE cartridge, the drying step is accomplished using vacuum or nitrogen or both. This drying step replaces manual techniques such as sodium sulfate drying. The analytes of interest are then eluted directly to the SuperVap Concentrator where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis. Automating these processes into one step ensures the highest quality results in the shortest amount of time and eliminates both human error and the possibility of contamination.

The TurboTrace Parallel system is modular and can run up to 8 samples in parallel providing direct-to-vial concentration and delivering unmatched throughput in solid phase extraction

Reduces Errors and Costs
One-step automated SPE and concentration eliminates human error, saves labor costs and reduces solvent usage while increasing your sample throughput

Fully Automated
Hyphenates the entire sample prep process--extraction, drying and concentration steps--into a one step process.

Runs up to 8 samples simultaneously

Sample Liquid Level Sensors to detect when the Sample has finished loading and waste overflow

Automatic Sample bottle rinse

Concentrates samples up to 250ml directly to a GC vial

High Speed
The fastest automated sample processing available for SPE cartridges and columns

Run up to eight samples simultaneously

Vacuum for fast loading of large volume samples

Applications
Drinking Water, Waste Water, Blood,
Milk and Beverages

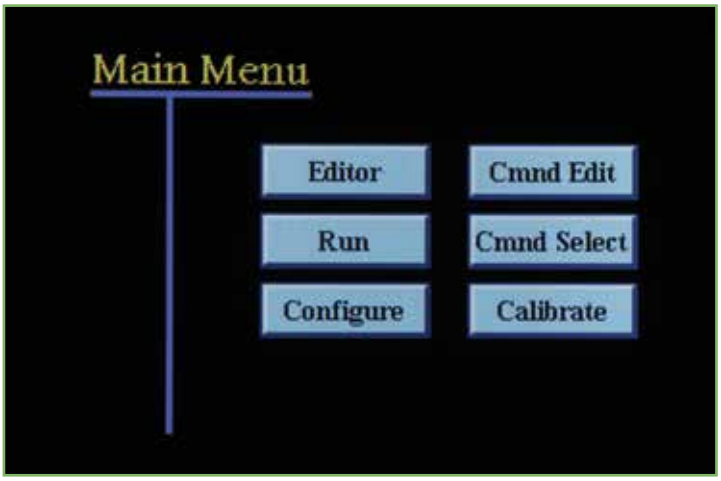
EPA Methods

608	Chlorinated Pesticides and PCB's
1613	Dioxin
1664A	Oil and Grease and SGT-HEM
1668A	Toxic PCB's by Isotope Dilution and GC/MS
1694	Pharmaceutical and Personal Care Products
8061	Phthalate esters
8081	TCLP Organochlorine pesticides
8082	PCB's
8095	Explosives
8141	Organophosphorus pesticides
8321	TCLP Phenoxyacid herbicides
8330	Nitroaromatics / Nitramines

Compliant
Complies with existing methods that require vacuum, positive pressure pumping for the precise delivery of sample and solvents

High Speed, High Throughput Automated Solid Phase Extraction for Difficult Samples

The TurboTrace Parallel SPE system incorporates vacuum or positive pressure pump to load samples for compliance with all SPE methods. It uses positive pressure pumping for precise and accurate delivery of conditioning, washing and elution solvents. The TurboTrace Parallel SPE system is specifically designed to isolate analytes of interest from a wide variety of liquid matrices such as urine, blood, water, milk, beverages. Sample sizes range from 2ml to 8L and use the same bottle the sample was collected in. Many sample loading rates are programmable. A vacuum or positive pressure pump is used to load samples onto the SPE cartridges and columns at unprecedented speeds and it easily handles both clean and tough sample matrices. A liquid sensor detects when the sample has been loaded, triggering the system to initiate next steps. The TurboTrace Parallel SPE system concentrates samples up to 250ml directly to a GC vial. The Sample Processing Module is designed to use all standard formats of SPE cartridges and columns on the market today. For guaranteed results, especially when dealing with low limits of detection, we recommend FMS pre-packed columns and cartridges.



System control is accomplished via an easy-to-use touch screen.

TurboTrace System is expandable from one to eight modules.

The SuperVap® Concentrator is where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis.

Automatic time-based or endpoint detection for nitrogen shut off for each vessel

Measurements - Concentration / Evaporation vessels in 500 µL, 1ml, and direct to a GC Vial or to dryness.

Specifications

Dimensions: 15” W x 18” D x 35” H
Weight: 65 lbs.
Gas Requirements: Nitrogen - 20 PSI minimum
Vacuum Requirements: 25” Hg minimum
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: Integrated Touch Screen Control

Ordering Information

Part number	Description
TurboTrace/1	TurboTrace SPE parallel system for 1 sample
TurboTrace/2	TurboTrace SPE parallel system for 2 samples
TurboTrace/3	TurboTrace SPE parallel system for 3 samples
TurboTrace/4	TurboTrace SPE parallel system for 4 samples
TurboTrace/5	TurboTrace SPE parallel system for 5 samples
TurboTrace/6	TurboTrace SPE parallel system for 6 samples
TurboTrace/7	TurboTrace SPE parallel system for 7 samples
TurboTrace/8	TurboTrace SPE parallel system for 8 samples
TurboTrace -EXP	TurboTrace Expansion Module

Consumables

Part number	Description
SPE-ADP-1	SPE 1ml Cartridge Adapter
SPE-ADP-20	SPE 20ml Cartridge Adapter
SPE-ADP-3	SPE 3ml Cartridge Adapter
SPE-ADP-6	SPE 6ml Cartridge Adapter
SPE-BT.05L	SPE Sample Bottle 500ml
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SPE-CAR1-C18	SPE Cartridge 1 gram C18
SPE-CAR1-DVB	SPE Cartridge 1 gram DVB
SPE-CAR5-C18	SPE Cartridge 5 gram C18
SPE-CAR6-DVB	SPE Cartridge 6 gram DVB

SPE Accessories

Part number	Description
SPE-CART-TRY	SPE Portable Cart and Tray

TurboTrace® Sequential SPE System

The TurboTrace® Sequential SPE Automated One-Step Extraction and Concentration System is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The TurboTrace Sequential SPE system automates existing manual SPE techniques and replaces older manual Liquid-Liquid Extraction techniques and outdated semi-automated instruments.

The TurboTrace Sequential SPE system is the only SPE system that combines extraction, drying and concentration into one step -- providing a truly automated total sample prep solution for the laboratory. Simply load samples onto the TurboTrace Sequential SPE system to start the automated extraction process. After loading the sample onto the SPE cartridge, the drying step is accomplished using Nitrogen. This drying step replaces manual techniques. The analytes of interest are then eluted directly to the SuperVap Concentrator where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis. Automating these processes into one step ensures the highest quality results in the shortest amount of time and eliminates both human error and the possibility of contamination.

The TurboTrace Sequential module is capable of readying five samples running one at a time.

Reduces Errors
One-step automated SPE and concentration eliminates human error, saves labor costs and reduces solvent usage while increasing your sample throughput

Fully Automated
Hyphenates the entire sample prep process--extraction, drying and concentration steps--into a one step program.

Runs up to 5 different methods/sample matrices sequentially

Concentrates samples up to 250ml directly to a GC vial.

Automatic Sample bottle rinse

High Speed
The fastest automated sample processing available for SPE cartridges and columns

Run up to four samples simultaneously, up to 20 samples total

Vacuum for fast loading of large volume samples

Applications

Drinking Water, Waste Water, Blood,
Milk and Beverages

EPA Methods

500 Series

600 Series

1600 Series

8000 Series

Compliant

Complies with existing methods that require vacuum, positive pressure pumping for the precise delivery of sample and solvents

Dispenses up to five solvents using an HPLC pump to deliver precise volumes and flow rates for conditioning and elution

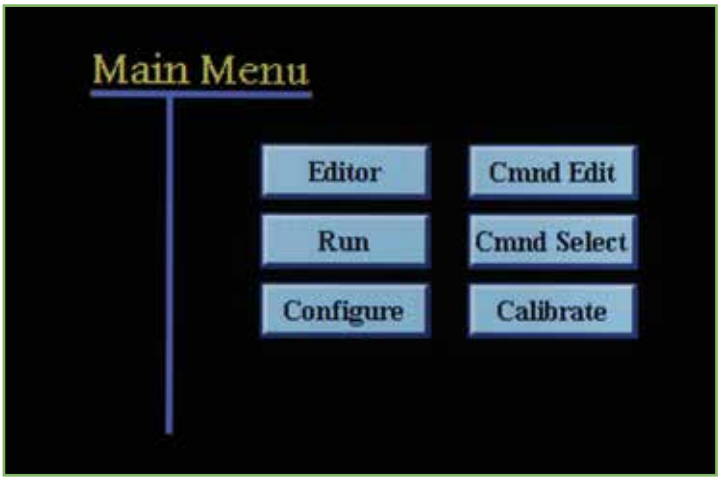
Easy Documentation
Programs and stores an unlimited number of methods and runs

Easy-to-use software

Automated Solid Phase Extraction and Direct to Vial Concentration

TurboTrace Sequential

The TurboTrace® Sequential SPE system uses positive pressure pumping for precise and accurate delivery of conditioning, washing and elution solvents. The TurboTrace® Sequential SPE system is specifically designed to isolate analytes of interest from a wide variety of liquid matrices such as urine, blood, water, milk, beverages. Sample sizes range from 2ml to 8L and use the same bottle the sample was collected in. Sample loading rates are programmable. A vacuum or positive pressure pump is used to load samples onto the SPE cartridges and columns at unprecedented speeds and it easily handles both clean and tough sample matrices. The TurboTrace® Sequential SPE system concentrates samples up to 250ml directly to a GC vial. The Sample Processing Module is designed to use all standard formats of SPE cartridges and columns on the market today. For guaranteed results, especially when dealing with low limits of detection, we recommend FMS pre-packed columns and cartridges. Sample Processing Modules can be easily replaced to perform cleanup column chemistries allowing the lab to multipurpose the TurboTrace® to automate other sample prep processes.



System control is accomplished via an easy-to-use touch screen.

The TurboTrace Sequential System is expandable from one to four modules to grow with your lab.

The SuperVap® Concentrator is where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis.

Automatic time-based or endpoint detection for nitrogen shut off for each vessel

Measurements - Concentration / Evaporation vessels in 500 µL, 1ml, and direct to a GC Vial or to dryness.

Specifications

Dimensions: 15” W x 18” D x 35” H
Weight: 65 lbs.
Gas Requirements: Nitrogen - 20 PSI minimum
Vacuum Requirements: 25” Hg minimum
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: Integrated Touch Screen Control

Ordering Information

Part number	Description
TurboTrace/SEQ/1	TurboTrace Sequential system for 5 samples
TurboTrace/SEQ/2	TurboTrace Sequential system for 10 samples
TurboTrace/SEQ/3	TurboTrace Sequential system for 15 samples
TurboTrace/SEQ/4	TurboTrace Sequential system for 20 samples
TurboTrace SEQ-EXP	TurboTrace Sequential Expansion Module

Consumables

Part number	Description
SPE-ADP-1	SPE 1ml Cartridge Adapter
SPE-ADP-20	SPE 20ml Cartridge Adapter
SPE-ADP-3	SPE 3ml Cartridge Adapter
SPE-ADP-6	SPE 6ml Cartridge Adapter
SPE-BT.05L	SPE Sample Bottle 500ml
SPE-BT1	SPE Sample Bottle 1 L
SPE-BT1.25L	SPE Sample Bottle 1250ml
SPE-BTRC	SPE Sample Bottle Rinse Cap
SPE-CAP-1L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 1L
SPE-CAP-2L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 2L
SPE-CAR1-C18	SPE Cartridge 1 gram C18
SPE-CAR1-DVB	SPE Cartridge 1 gram DVB
SPE-CAR5-C18	SPE Cartridge 5 gram C18
SPE-CAR6-DVB	SPE Cartridge 6 gram DVB

SPE Accessories

Part number	Description
SPE-CART-TRY	SPE Portable Cart and Tray

TurboTrace® ABN SPE System

The TurboTrace ABN SPE system is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The TurboTrace ABN SPE system automates existing manual SPE techniques and replaces older manual Liquid-Liquid Extraction techniques and outdated semi-automated instruments.

The TurboTrace ABN SPE system is the only SPE system that combines Dual Cartridge extraction, fractionation, drying and concentration into one step -- providing a truly automated total sample prep solution for the laboratory. Simply load samples onto the TurboTrace ABN SPE system and trigger the automated extraction process. After loading the sample onto the SPE cartridges, the drying step is accomplished using Nitrogen. This drying step replaces manual techniques. The analytes of interest are then eluted directly to the SuperVap Concentrator where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis. Automating these processes into one step ensures the highest quality results in the shortest amount of time and eliminates both human error and the possibility of contamination. The full process is complete in just over 1 hour versus 16 to 18 hrs and cuts solvent consumption by 70%.

The TurboTrace ABN System is expandable from one to eight modules.

Reduces Errors
One-step automated SPE and concentration eliminates human error, saves labor costs and reduces solvent usage while increasing your sample throughput

Fully Automated
Hyphenates the entire sample prep process--extraction, drying and concentration steps--into a one step program.

Runs up to 6 samples, simultaneously

Sample Liquid Level Sensor to detect when the Sample has finished loading

Automatic Sample bottle rinse

Concentrates samples up to 250ml directly to a GC vial

Waste liquid level sensor to prevent waste overflow

Dual Cartridge extraction and fractionation of Acid/Base/Neutral analytes

High Speed
The fastest automated sample processing available for ABN methods using SPE cartridges and columns ready for analysis in hours versus days

Run up to eight samples simultaneously

Vacuum for fast loading of large volume samples

Versatile
Handles a wide range of sample sizes and all matrix types

Dual Cartridge allows for many other types of multi cartridge applications

Up to 3 fractions per run

Sample Sizes 2ml to many liters

Sample Liquid Level Sensor to detect when the Sample has finished loading

Expandable from 1 to 6 modules

Applications
Drinking Water, Waste Water, Blood, Milk and Beverages

EPA Methods
625 Semi-Volatiles
8270 TCLP Semi-volatiles
500, 600, 1600, 8000 Series

The First Automated Multi Cartridge MultiFraction Solid Phase Extraction System

Compliant
Complies with existing methods that require vacuum, positive pressure pumping for the precise delivery of sample and solvents

Dispenses up to five solvents using an HPLC pump to deliver precise volumes and flow rates for conditioning and elution

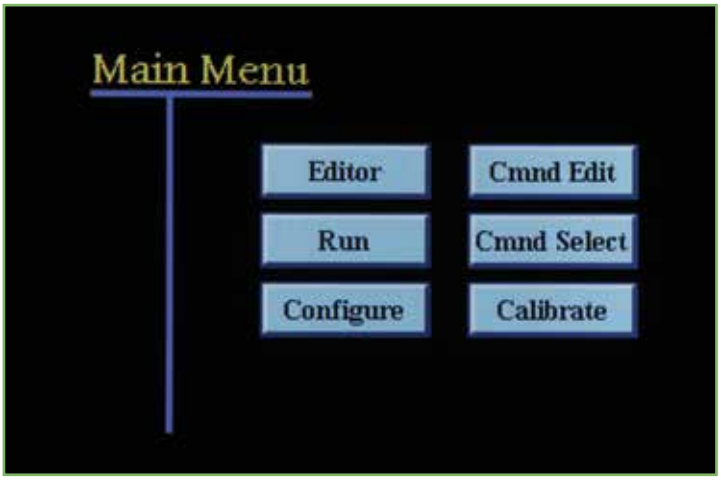
Easy Documentation
Programs and stores an unlimited number of methods and runs on an SD Card for Easy method transfer

Easy-to-use software

The TurboTrace ABN SPE system uses positive pressure pumping for precise and accurate delivery of conditioning, washing and elution solvents. The TurboTrace ABN SPE system is specifically designed to isolate analytes of interest from a wide variety of liquid matrices such as urine, blood, water, milk, beverages. Sample sizes range from 2ml to 8L and use the same bottle the sample was collected in. Sample loading rates are programmable. A vacuum or positive pressure pump is used to load samples onto the SPE cartridges and columns at unprecedented speeds and it easily handles both clean and tough sample matrices. The TurboTrace ABN SPE system concentrates samples up to 250ml directly to a GC vial. The Sample Processing Module is designed to use all standard formats of SPE cartridges and columns on the market today. For guaranteed results, especially when dealing with low limits of detection, we recommend FMS pre-packed columns and cartridges.

The TurboTrace ABN SPE system is a Multi Cartridge, Multi fractionation system that can be used for any SPE method requiring more than one cartridge or fraction.

The TurboTrace System is expandable from one to eight modules.



System control is accomplished via an easy-to-use touch screen.

Prep ABN Samples Directly to a Vial in Hours Not Days

The SuperVap® Concentrator is where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis.

Automatic time-based or endpoint detection for nitrogen shut off for each vessel

Measurements - Concentration / Evaporation vessels in 500 µL, 1ml, and direct to a GC Vial or to dryness.

Specifications

Dimensions: 15” W x 18” D x 35” H
Weight: 65 lbs.
Gas Requirements: Nitrogen - 20 PSI minimum
Vacuum Requirements: 25” Hg minimum
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: Integrated Touch Screen Control

Ordering Information

Part number	Description
TurboTrace/ABN/1	TurboTrace ABN SPE parallel system for 1 sample
TurboTrace/ABN/2	TurboTrace ABN SPE parallel system for 2 samples
TurboTrace/ABN/3	TurboTrace ABN SPE parallel system for 3 samples
TurboTrace/ABN/4	TurboTrace ABN SPE parallel system for 4 samples
TurboTrace/ABN/5	TurboTrace ABN SPE parallel system for 5 samples
TurboTrace/ABN/6	TurboTrace ABN SPE parallel system for 6 samples
TurboTrace/ABN/-EXP	TurboTrace ABN Expansion Module

Consumables

Part number	Description
SPE-ADP-1	SPE 1ml Cartridge Adapter
SPE-ADP-20	SPE 20ml Cartridge Adapter
SPE-ADP-3	SPE 3ml Cartridge Adapter
SPE-ADP-6	SPE 6ml Cartridge Adapter
SPE-BT.05L	SPE Sample Bottle 500ml
SPE-BT1	SPE Sample Bottle 1L
SPE-BT1.25L	SPE Sample Bottle 1250ml
SPE-BTRC	SPE Sample Bottle Rinse Cap
SPE-CAP-1L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 1L
SPE-CAP-2L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 2L
SPE-CAR1-C18	SPE Cartridge 1 gram C18
SPE-CAR1-DVB	SPE Cartridge 1 gram DVB
SPE-CAR5-C18	SPE Cartridge 5 gram C18
SPE-CAR6-DVB	SPE Cartridge 6 gram DVB

SPE Accessories

Part number	Description
SPE-CART-TRY	SPE Portable Cart and Tray
SPE-CAR2 -ABN Kit	SPE ABN Cartridge Kit, contains cartridges for ABN extraction

TurboTrace® PFC SPE System

The TurboTrace PFC (Perfluoralkylated substances) SPE system is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. It is designed for high throughput and tough sample matrices. The TurboTrace PFC SPE system automates existing manual SPE techniques and replaces older manual Liquid-Liquid Extraction techniques and outdated semi-automated instruments. Perfluoralkylated is a general term used to describe substances which are largely comprised of or contain a perfluorinated or polyfluorinated carbon chain moiety such as F(CF2)n- or F(CF2)n-(C2H4)n. In recent years, there has been increasing concern over the levels of perfluorinated and polyfluorinated chemicals, such as PFOS (perfluorosulfonate) and PFOA (perfluorooctanoicacid), in the global environment and their fate and possible adverse effects in the environment. PFOS is now subject to varying but increasing levels of control in a number of countries. The TurboTrace PFC SPE system, the first automated solid phase extraction system made specifically for PFC extraction and concentration. Primarily effective at reducing background contamination. Extraction and concentration of aqueous samples takes less than two hours.

The TurboTrace PFC System runs in parallel and is expandable from one to eight modules.

The TurboTrace PFC SPE system combines extraction, drying and concentration into one step -- providing a truly automated total sample prep solution for the laboratory. Simply load samples onto the TurboTrace PFC SPE system, and use the touch screen to trigger the automated extraction process. After loading the sample onto the SPE cartridge, the drying step is accomplished using vacuum or nitrogen or both. This drying step replaces manual techniques such as sodium sulfate drying. The analytes of interest are then eluted directly to the SuperVap Concentrator where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis. Automating these processes into one step ensures the highest quality results in the shortest amount of time and eliminates both human error and the possibility of contamination.

The First Automated Solid Phase Extraction System Dedicated to Perfluoralkylated Substances

Reduces Errors
One-step automated SPE and concentration eliminates human error, saves labor costs and reduces solvent usage while increasing your sample throughput

Reduces background Contamination

Fully Automated

Hyphenates the entire sample prep process--extraction, drying and concentration steps--into a one step program.

Runs up to eight samples simultaneously

Sample Liquid Level Sensors to detect when the Sample has finished loading and to prevent waste overflows.

Automatic Sample bottle rinse

Concentrates samples up to 250ml directly to a GC vial

High Speed
The fastest automated sample processing available for SPE cartridges and columns

Run up to eight samples simultaneously

Vacuum for fast loading of large volume samples

Versatile
Handles a wide range of sample sizes and all matrix types

Sample Sizes 2ml to many liters

Sample Liquid Level Sensor to detect when the Sample has finished loading

Expandable from 1 to 8 modules

Efficient
Uses all SPE cartridge and column sizes

Positive pressure pumping for loading small volume samples

Nitrogen drying

Compliant

Complies with existing methods that require vacuum, positive pressure pumping for the precise delivery of sample and solvents

Dispenses up to six solvents using an HPLC pump to deliver precise volumes and flow rates for conditioning and elution

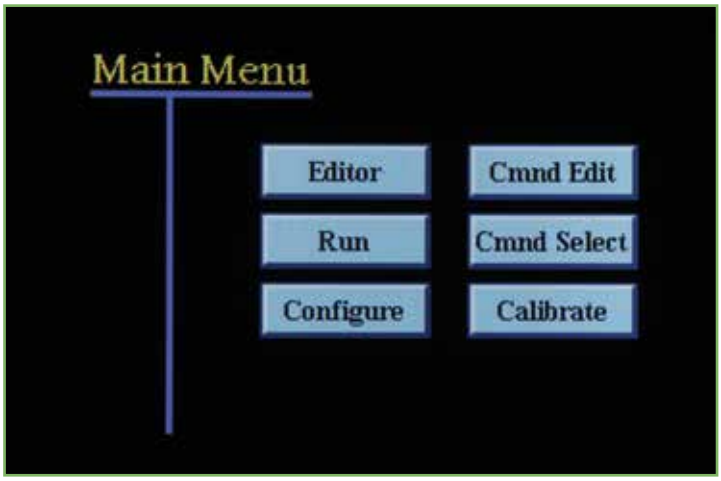
Easy Documentation
Programs and stores an unlimited number of methods and runs on an SD Card for Easy method transfer

Easy-to-use software - Touch screen operation

The TurboTrace PFC SPE system incorporates vacuum or positive pressure pump to load samples for compliance with all SPE methods. It uses positive pressure pumping for precise and accurate delivery of conditioning, washing and elution solvents. The TurboTrace PFC SPE system is specifically designed to isolate analytes of interest from a wide variety of liquid matrices such as urine, blood, water, milk, beverages. Sample sizes range from 2ml to 8L and use the same bottle the sample was collected in. Sample loading rates are programmable. A vacuum or positive pressure pump is used to load samples onto the SPE cartridges and columns at unprecedented speeds and it easily handles both clean and tough sample matrices. A liquid sensor detects when the sample has been loaded, triggering the system to initiate next steps. The TurboTrace PFC SPE system concentrates samples up to 250ml directly to a GC vial. The Sample Processing Module is designed to use all standard formats of SPE cartridges and columns on the market today. For guaranteed results, especially when dealing with low limits of detection, we recommend FMS pre-packed columns and cartridges. Sample Processing Modules can be easily replaced to perform cleanup column chemistries allowing the lab to multipurpose the TurboTrace PFC SPE system to automate other sample prep processes.

The TurboTrace PFC System is expandable from one to eight modules

An Automated Low Background, High Throughput method for a Tedious Manual Sample Prep



System control is accomplished via an easy-to-use touch screen.

The SuperVap® Concentrator is where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis.

Automatic time-based or endpoint detection for nitrogen shut off for each vessel

Measurements - Concentration / Evaporation vessels in 500 µL, 1ml, and direct to a GC Vial or to dryness.

Specifications

Dimensions: 15” W x 18” D x 35” H
Weight: 65 lbs.
Gas Requirements: Nitrogen - 20 PSI minimum
Vacuum Requirements: 25” Hg minimum
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: Integrated Touch Screen Control

Ordering Information

Part number	Description
TurboTrace/PFC/1	TurboTrace PFC parallel system for 1 sample
TurboTrace/PFC/2	TurboTrace PFC parallel system for 2 samples
TurboTrace/PFC/3	TurboTrace PFC parallel system for 3 samples
TurboTrace/PFC/4	TurboTrace PFC parallel system for 4 samples
TurboTrace/PFC/5	TurboTrace PFC parallel system for 5 samples
TurboTrace/PFC/6	TurboTrace PFC parallel system for 6 samples
TurboTrace/PFC/7	TurboTrace PFC parallel system for 7 samples
TurboTrace/PFC/8	TurboTrace PFC parallel system for 8 samples
TurboTrace PFC-EXP	TurboTrace PFC Expansion Module

Consumables

Part number	Description
SPE-ADP-1	SPE 1ml Cartridge Adapter
SPE-ADP-20	SPE 20ml Cartridge Adapter
SPE-ADP-3	SPE 3ml Cartridge Adapter
SPE-ADP-6	SPE 6ml Cartridge Adapter
SPE-BT.05L	SPE Sample Bottle 500ml
SPE-BT1	SPE Sample Bottle 1L
SPE-BT1.25L	SPE Sample Bottle 1250ml
SPE-BTRC	SPE Sample Bottle Rinse Cap
SPE-CAP-1L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 1L
SPE-CAP-2L	SPE Bottle Cap with Loading and Sample Rinse Tubings and Adapters, 2L

SPE Accessories

Part number	Description
SPE-CART-TRY	SPE Portable Cart and Tray

NanoTrace® Small Volume SPE system

The NanoTrace Small Volume SPE Automated One-Step Extraction and Concentration System is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The NanoTrace Small Volume SPE system automates existing manual SPE techniques and replaces older manual Liquid-Liquid Extraction techniques and outdated semi-automated instruments.

The NanoTrace Small Volume SPE system is the only small volume SPE system that combines extraction, drying and concentration into one step -- providing a truly automated total sample prep solution for the laboratory. The NanoTrace uses small bore tubing throughout to minimize dead volume. It is specifically designed to use 1ml and larger SPE cartridges. Simply load samples as small as 250ul onto the NanoTrace Small Volume SPE system and trigger the automated extraction process. After loading the sample onto the SPE cartridge, the drying step is accomplished using Nitrogen. This drying step replaces manual or vacuum techniques used in manifolds. The analytes of interest are then eluted directly to the SuperVap Concentrator where the concentration process automatically brings the extract to final volume directly into an autosampler vial, ready for final analysis. Automating these processes into one step ensures the highest quality results in the shortest amount of time and eliminates both human error and the possibility of contami-

The NanoTrace Small Volume SPE system can run 5 samples sequentially per module and 2 modules in parallel

Reduces Errors
One-step automated SPE and concentration eliminates human error, saves labor costs and reduces solvent usage while increasing your sample throughput.

Fully Automated
Hyphenates the entire sample prep process--extraction, drying and concentration steps--into a one step program.

Runs up to five different methods/sample matrices sequentially

High Speed
The fastest automated sample processing available for 1ml and up SPE cartridges and columns

Run one sample at a time with a total of 5 in the ready mode

Expandable from one to two modules, each module has 5 samples in the ready mode

One to four samples simultaneously, up to 20 samples total unattended

Positive Pressure pumping for low volume samples

Versatile
Handles a wide range of sample sizes and all matrix types

Sample Sizes 250ul to liters

Expandable from 1 to 2 modules

5 samples per module sequentially

Applications
Blood, Serum, Urine, Pharmaceutical Products, Beverages

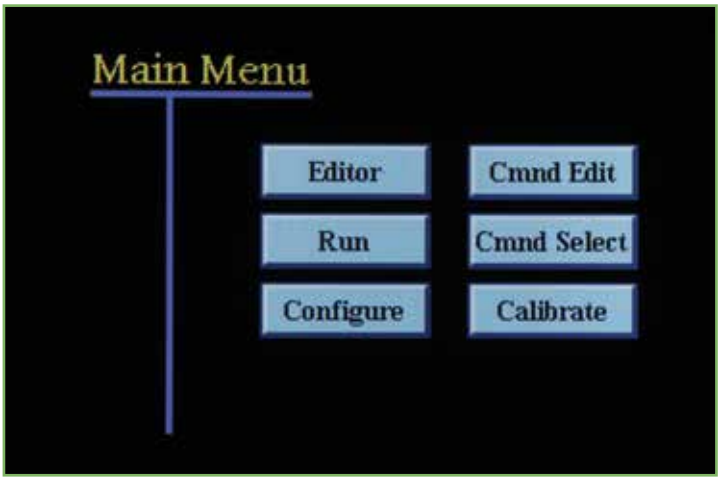
Compliant
Complies with existing methods that require positive pressure pumping for the precise delivery of sample and solvents

Dispenses up to five solvents using an HPLC pump to deliver precise volumes and flow rates for conditioning and elution

Easy Documentation
Programs and stores an unlimited number of methods on an SD card for method transfer and storage

Easy-to-use software
Touch screen entry

nation.
The NanoTrace Small Volume SPE system uses positive pressure pumping for precise and accurate delivery of the sample, conditioning, washing and elution solvents. The NanoTrace Small Volume SPE system is specifically designed to isolate analytes of interest from a wide variety of liquid matrices such as pharmaceutical extracts and samples, urine, blood, water, milk, beverages. Sample sizes range from 250ul to liters and use the same bottle the sample was collected in. Sample loading rates are programmable. A positive pressure pump is used to load samples onto the SPE cartridges and columns at unprecedented speeds and it easily handles small volume sample matrices. The NanoTrace Small Volume SPE system combine with the SuperVap 12 50ml system concentrates samples up to 50ml down to directly to a GC vial. The Sample Processing Module is designed to use all standard formats of SPE cartridges and columns on the market today. For guaranteed results, especially when dealing with low limits of detection, we recommend FMS pre-packed columns and cartridges.



System control is accomplished via an easy-to-use touch screen.

The NanoTrace is modular and expandable from one to four modules to grow with your Laboratory

The SuperVap® Concentrator is where the concentration process automatically brings the extract to final volume in an autosampler vial, ready for final analysis.

Automatic time-based or endpoint detection for nitrogen shut off for each vessel

Measurements - Concentration / Evaporation vessels in 500 µL, 1ml, and direct to a GC Vial or to dryness.

Specifications

Dimensions: 15” W x 18” D x 35” H
Weight: 65 lbs.
Gas Requirements: Nitrogen - 20 PSI minimum
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: Integrated Touch Screen Control

Ordering Information

Part number	Description
NanoTrace/1	NanoTrace system for 5 samples (Single Module)
NanoTrace/2	NanoTrace system for 10 samples (Two Modules)
Nano-EXP	NanoTrace Expansion Module

PowerPrep®

MultiColumn Sample Cleanup for Trace Analysis

The Powerprep Multi Column Sample Cleanup system automates error prone, complex, tedious, manual sample cleanup and fractionation in the laboratory. It replaces older manual techniques by automating the sample loading, washing, elution, fractionation and evaporation steps of the process increasing the laboratories throughput by performing sample cleanup and fractionation in hours instead of days.

The PowerPrep Multi Column Sample Cleanup System is the only automated sample processing system of its kind in today's laboratories. The automated liquid chromatography system performs simultaneous sample processing automatically and unattended. The total sample prep process, sample loading, washing, elution and fraction collection is done automatically. Built by design specifically to replace difficult, error prone, time and labor consuming manual processes involved in sample cleanup for trace analysis. The PowerPrep Multi Column Sample Cleanup System performs the sample cleanup process in hours versus days for the trace analysis of Persistent Organic Pollutants in all sample matrices.

The PowerPrep Multicolumn Cleanup system runs 1 to 8 samples in parallel performing sample cleanup and fractionation with direct to vial concentration

Versatile Rapid Sample Processing:

The PowerPrep® system automates the entire manual sample cleanup process, unattended in hours versus days. The Sample Processing Modules can be easily replaced to perform single column sample cleanup chemistries allowing the lab to multipurpose the PowerPrep for automating other sample prep processes.

Cost Effective & Reliable Unattended Operation:
Performs the entire column chromatography, automatically and unattended achieving consistent, reproducible recoveries for all analytes. Unattended operation of the system saves labor and time, reducing glassware and solvents. It automates difficult manual sample cleanup procedures specifically for the trace analysis of Dioxins, BFRs, PCBs, Pesticides and PAHs.

High Recovery of all Analytes:
FMS columns are certified and guaranteed for the cleanup of samples for the trace analysis of Dioxins, PAHs, PBDEs, and PCBs producing the highest recoveries for all analytes of interest.

Modular, Expandable, Affordable, Easy to Maintain:
The PowerPrep system is modular and can be Expanded from 1 to 8 Samples. Both expansion and module replacement are done via FMS's quick connect modules. Reducing system down time, increasing laboratory throughput and eliminating cross contamination from sample to sample.

Applications
Liquids, Milk, Oil, Serum, Water, Waste Water, Solids, Fish, Feed, Meat, Soil, Fly Ash

Supported EPA Methods

Method 1613	Dioxin and Furans
Method 1614	Brominated Diphenyl Ethers in Water, Soil, Sediment and Tissue
Method 1668A	Clorinated Bipenyl Congeners
SW - 846	Test Methods for Solid Waste
40 CFR 136	Methods for POPs analysis

FMS
Fluid Management Systems

Disposable Columns:
The PowerPrep System uses FMS proprietary columns that are made from teflon and contain packing's such as multi-layer ABN silica, acidic silica, basic silica, neutral silica, alumina, carbon and florisil. FMS columns are tested for purity and performance. Prior to shipment they are certified and guaranteed. FMS columns are Certified and Guaranteed for the cleanup of sample for the Trace Analysis of Dioxins, PAHs, PBDEs, and PCBs producing the Highest Recoveries for all analytes of interest

Easy Documentation:
Programs and stores an unlimited amount of methods and runs.

Samples are cleaned up and directly fractionated to the SuperVap Concentrator for unattended concentration directly to a vial.

Specifications

Dimensions: 15" W x 18" D x 35" H
Weight: 65 lbs.
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ

FMS pre-packed Columns for guaranteed purity.

The PowerPrep Multicolumn Cleanup system is modular and is expandable from 1 to 8 samples to meet your laboratories throughput

Optional SuperVap concentration for one step sample cleanup and concentration for Dioxin and PCBs analysis

PowerPrep Consumables

Part Number	Description
	Low capacity Columns
LCDS-ABN-STD	Low Capacity Disposable Silica ABN Column
LCDA-BAS-006	Low Capacity Disposable Basic Alumina Column
CLDC-CCE-034	Disposable Carbon/Celite (.34g) Column
	Low Capacity PCB Free Columns
PCBL-ABN-STD	PCB Free Low Capacity Disposable Silica ABN Column
PCBL-BAS-006	PCB Free Low Capacity Disposable Alumina (6g) Column
PCBC-CCE-034	PCB Free Classical Disposable Carbon/celite Column .34g
	Low Capacity PBDE free columns
PBDEL-BAS-006	PBDE Free Low Capacity Disposable Alumina (6g) Column
PBDEL-ABN-STD	PBDE Free Low Capacity Disposable Silica ABN Column
PBDEL -CCE-034	PBDE Free low capacity Disposable Carbon/Celite column .34 g
	Classical Columns
CLDS-ABN-STD	Classical Disposable Silica ABN Column
CLDA-BAS-011	Disposable Basic Alumina (11g) Column
CLDC-CCE-034	Disposable Carbon/Celite (.34g) Column
HCDS-ABN-STD	High Capacity Disposable ABN Silica Column
HCDS-ACD-STD	High Capacity Disposable Acidic Silica Column
HCDS-ABN-STD-TFC	High Capacity Disposable ABN Silica Column with Teflon Chip
HCDS-ACD-STD-TFC	High Capacity Disposable Acidic Silica Column with Teflon Chip
	PCB Free classical Columns
PCBS-ABN-STD	PCB Free Classical Disposable Silica ABN Column
PCBA-BAS-011	PCB Free Disposable Alumina (11g) Column
PCBC-CCE-034	PCB Free Classical Disposable Carbon Column
PCB-HCDS-ABN	PCB Free High Capacity Disposable ABN Silica Column
PCB-HCDS-ACD	PCB Free High Capacity Disposable Acidic Silica Column
PCB-HCDS-ABN-TFC	PCB Free High Capacity Disposable ABN Silica Column with Teflon Chip
PCB-HCDS-ACD-TFC	PCB Free High Capacity Disposable Acidic Silica Column with Teflon Chip
	PBDE Free classical columns
PBDES-ABN-STD	PBDE Free Classical Disposable Silica ABN Column
PBDEA-BAS-011	PBDE Free Disposable Alumina (11g) Column
PBDEC-CCE-034	PBDE Free Classical Disposable Carbon/Celite Column
PBDE-HCDS-ABN	PBDE Free High Capacity Disposable ABN Silica Column
PBDE-HCDS-ACD	PBDE Free High Capacity

Part Number	Description
	Disposable Acidic Silica Column
PBDE-HCDS-ABN-TFC	PBDE Free High Capacity Disposable ABN Silica Column with Teflon Chip
PBDE-HCDS-ACD-TFC	PBDE Free High Capacity Disposable Acidic Silica Column with Teflon Chip
	Silver Nitrate /Silica columns
CLDS-ABN-SNT	Classical Disposable ABN Silica + Silver Nitrate Column
PCBS-ABN-SNT	PCB Free Classical Disposable ABN Silica + Silver Nitrate Column
PBDES-ABN-SNT	PBDE Free Classical Disposable ABN Silica + Silver Nitrate Column
HCDS-ABN-SNT	High Capacity Disposable ABN Silica + Silver Nitrate Column
	Carbon/Silica columns
CLDC-CSI-002	Disposable Carbon/Silica (2g) Column
PCBC-CSI-002	PCB Free Disposable Carbon/Silica (2g) Column
PBDEC-CSI-002	PBDE Free Disposable Carbon/Silica (2g) Column
	Miscellaneous columns
CLDF-FLR-705	Classical Disposable Florisil (7.5g) Column
CLDS-ACD-008	Classical Disposable Acidic Silica (8g) Column
CLDS-NSS-060	Classical Disposable Neutral Silica (6g) Column
PCBA-5BAS-011	PCB Free Disposable 0.5% Deactivated Alumina (11g) Column
PBDEA-5BAS-011	PBDE Free Disposable 0.5% Deactivated Alumina (11g) Column
	Hex Fittings
CLTF-FIT-000	Fitting Teflon Hex For Classical Teflon Columns
CLTF-FIT-025	Fitting Teflon Hex For High Capacity Columns
	Tefzel fittings
UNI-TFZ-028	Fitting Tefzel Union
MLU-TFZ-028	Fitting Tefzel Male Luer
FLU-TFZ-028	Fitting Tefzel Female Luer
	Delrin Fittings
UNI-DEL-028	Fitting Delrin Union
MLU-DEL-028	Fitting Delrin Male Luer
FLU-DEL-028	Fitting Delrin Female Luer
	Fritz
FRZ-TFE-678	Small Fritz
FRZ-TFE-901	Large Fritz
	Vial & Syringe
TUBE-CEN-015	Glass Sample Vials With Caps 15ml
SYRI-POL-010	Polypropylene Syringes

EconoPrep® Family
of Automated Low Cost, Green Sample Cleanup Solutions for Dioxin and PCB analysis

Imagine performing the Sample Cleanup process for POPs analysis in liquids and solids automatically in as little as 30 minutes.

Built on 25 years of FMS, Inc. experience and technology that has processed millions of Dioxin samples

FMS introduces a new family of integrated, economical sample cleanup systems that combine manual sample prep steps into one automated process. EconoPrep® systems perform sample cleanup, fractionation and concentration for up to eight samples simultaneously in less than 1 hour, while delivering the highest recoveries and best results for all target Dioxin and PCB analytes. The systems are programmed and controlled via an easy-to-use touch screen and methods are stored on SD cards. A flexible system that allows running a single sample preparation step, such as sample cleanup, fractionation or concentration is also an option.

The EconoPrep® Classic for samples with up to 0.4 grams of lipid

EconoPrep® Multi-column Sample Cleanup system is modular, it runs two samples per module, supports up to 4 modules to run a total of 8 samples in parallel.

Simultaneously perform eight sample cleanups and concentrations in less than 1 hour.
The EconoPrep systems are integrated, economical sample preparation systems that combine the sample cleanup, and evaporation steps into one automated process.

High Recovery of all Analytes:
FMS columns are certified and guaranteed for the cleanup of samples for the trace analysis of Dioxins, PAHs, PBDEs, and PCBs producing the highest recoveries for all analytes of interest.

Unattended sample preparation.
Install the cleanup columns on the system, push the "Run" button and walk away. The EconoPrep systems will automatically load a sample and perform the entire sample preparation process unattended, in virtually one step. The final fraction is ready for analysis by GC, LC, or GC/LC/MS.

Same day turn around for multiple samples.
Liquids, Milk, Oil, Serum, Water, Waste Water, Solids, Fish, Feed, Meat, Soil, Fly Ash

Supported EPA Methods
Method 1613 Dioxin and Furans
Method 1614 Brominated Diphenyl Ethers in Water, Soil, Sediment and Tissue Method
1668A Chlorinated Bipenyl Congeners
SW - 846 Test Methods for Solid Waste
40 CFR 136 Methods for POPs analysis

EconoPrep® High Capacity for samples with up to 7 grams of lipid

EconoPrep® Multi-column Sample Cleanup system configured for high lipid content.

FMS
Fluid Management Systems

Greener Approach Dramatically Reducing Solvent Consumption
The greater efficiency with which the EconoPrep systems perform cleanup reduces solvent consumption.
-Solvent Consumption as low as 120ml

Dramatic savings in time and resources
EconoPrep systems perform the complete preparation of eight samples in just a 30 minutes, instead of days. This results in time and labor savings as well as high throughput.

Low background automated sample prep
The advanced, closed loop system design combined with pre-packed, disposable columns deliver cleaner backgrounds and eliminate cross contamination.

Wide range of pre-packed, disposable cleanup columns
A wide variety of economical, pre-packed, disposable cleanup columns are available for use with EconoPrep systems. These columns are configured in a variety of sizes and packing material types − from standard multi-layered ABN silica to custom made columns.

Disposable Columns used for Dioxins and PCBs, analysis:

1. Multi-layered ABN silica
2. Alumina
3. Carbon
4. High capacity acid silica (optional used for fatty samples, these column removes 5 to 7 grams of fat

Robust and maintainable
The modular, flexible design of EconoPrep systems virtually eliminates downtime and makes them the most easily to maintain systems in today's laboratories. Each system channel operates independently of the other channels, so if one channel malfunctions the others still work. Should a module malfunction, laboratory personnel can replace it on-site and the exposed construction makes parts accessible for easy replacement.

The EconoPrep® is modular and expandable. It runs 2 samples per module and is expandable to 4 modules running up to 8 samples in parallel

The EconoPrep® expand to 4 modules for running 8 samples in parallel in 40 minutes

Easily upgraded to Integrated Sample Extraction, Cleanup, and Concentration Systems for the Total Solution

The TotalPrep® is modular and expandable. It runs 2 samples per module and is expandable to 4 modules running up to 8 samples in parallel

FMS, Inc. Introduces the New Chemistry Kit Rental Program for the Industry Standard EconoPrep® Mutlicolumn Cleanup System for Dioxins and PCBs

- Allows the laboratory to acquire equipment without the outlay of capital funds
- A program designed to fit within a laboratory's budgetary constraints better than a capital purchase
- Offers a program that could fit within a laboratory's purchasing departments constraints
- It will allow laboratories to implement automation quickly and not have to wait for months or years

Specifications

Weight: 65 lbs.
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: Integrated Touch Screen Control

Dimensions:
EconoPrep2 = 16"(41cm)W X 26"(65cm) H X 17"(43cm) D
EconoPrep4 = 25"(63cm)W X 26"(65cm) H X 17"(43cm) D
EconoPrep6 = 34"(86cm)W X 26"(65cm) H X 17"(43cm) D
EconoPrep8 = 43"(110cm)W X 26"(65cm) H X 17"(43cm) D

Weights:
Control module = 22lbs
EconoPrep valve module = 31lbs
Control Module Base = 6 lbs
Single Base = 3 lbs

EconoPrep2 = 62lbs
EconoPrep4 = 97lbs
EconoPrep6 = 132lbs
EconoPrep8 = 167lbs

Small cart = 35lbs
Small tray = 20lbs
Medium cart = 40lbs
Medium tray = 25lbs
Large cart = 45lbs
Large tray = 35lbs

PowerPrep® EPH Single Column Cleanup and Fractionation System

The PowerPrep® EPH Fractionation system performs fractionation and sample cleanup for up to 30 samples in less than one hour, producing the highest recoveries and best results for aliphatic and aromatic hydrocarbon content. With the PowerPrep EPH system you have the option of expanding from one module, that will perform five sample fractionation and cleanups, to a six module system capable of performing 30 sample fractionation and cleanups.

The PowerPrep EPH system delivers the reproducibility you demand by consistently conditioning the columns, delivering the sample performing the sample cleanup and fractionation. The PowerPrep EPH system increases sample throughput while reducing errors. It eliminates poor recoveries and provides a cleaner background while eliminating contamination. This system uses FMS's high quality and inexpensive, Polypropylene based, pre-packed, disposable columns that deliver high recoveries and eliminate the errors and time spent on manual column packing, gravimetric chromatography and glassware cleanup.

The PowerPrep EPH Single Column Cleanup and Fractionation System system runs 5 samples sequentially and in parallel while providing direct-to-vial concentration

Separates Aliphatic and Aromatic Hydrocarbons
Fractionation is accomplished using either polypropylene cartridges pre-packed with silica gel or glass columns manually packed with conditioned silicagel. While it is difficult to achieve the high aliphatic and aromatic compounds recovery, the manual collection of fractions by using poly-propylene cartridges or manually packed glass columns requires additional time for column preparation and calibration. FMS offers a precise method that is automatically controlled by a programmable workstation with patented pre-packed and pre-conditioned columns. Together, they guarantee a consistent level of fractionation and recoveries of targeted compounds.

Fast turnaround: 30 Samples in One Hour
The PowerPrep EPH system increases sample throughput while reducing errors and poor recoveries.

Produces Consistent, Reproducible Results
With just a few keystrokes, the PowerPrep EPH system performs an entire column chromatography, automatically achieving high recoveries for all analytes.

Ready-to-Use, Conditioned Columns From FMS
The PowerPrep EPH system uses pre-packed disposable columns made from Teflon and silica. FMS's columns are tested for purity and performance prior to shipment.

Automates in compliance with Methods MADEP EPH, TNRCC Method 1005-1006
The PowerPrep EPH system is changing high speed sample processing in today's laboratories. You need only to load your samples, snap on your pre-packed columns and press the start key. The system performs the entire sample cleanup and fractionation according to the MADEP EPH, TNRCC Method 1005-1006 making compliance easy.

Reduce solvent and glassware usage
FMS pre-packed disposable columns eliminate washing glassware and the solvents to clean that glassware.

Dramatically Cuts Operation Costs
Unattended operation of the system saves labor and valuable time. FMS pre-packed columns reduce the need to QC test in the lab as well as errors caused from manual fractionation.

Modular and expandable
With the PowerPrep EPH Fractionation system you have the option to expand from one module, which will perform five sample fractionation and cleanups, a six module system which will perform 30 sample fractionation and cleanups.

Robust and Easy to Maintain
Both system expansion and module replacement are performed via FMS's quick connect modules. This feature reduces system down time and increases laboratory throughput.

Cookbook Method
FMS's powerful windows-based monitoring and control software offers a rich set of features and flexibility, including methods development and optimization. Once the method is optimized it is saved and used for each run, eliminating the need to create a new method each time the system is run. Input parameters include flow rates, volumes, column selection, sample size, solvent selection and fraction collection.

The SuperVap® Small Volume is a standalone automated direct-to-vial concentration system

Specifications

Dimensions: 15" W x 18" D x 35" H
Weight: 130 lbs.
Pump: Piston Displacement
Flow rate: 0.2 to 15ml/minute
Electrical Input: 110/220 Volts, 50/60 HZ
Controller: PC based

PowerPrep® GPC

The PowerPrep GPC® system is a low cost automated Gel Permeation Chromatography system designed to separate synthetic macromolecules such as pesticides, PCBs, PAHs etc. from interfering compounds. It uses glass or teflon columns packed with styrene-divinylbenzene resin beads to perform sample clean-up using size exclusion chromatography technique. The samples are loaded onto the column, then washed and collected in the appropriate fraction vessels. The PowerPrep GPC system greatly simplifies sample cleanup through its unattended operation, increased speed and precision. Options such as different types of columns, UV detector and a PC allow versatility in a sample type, automatic monitoring, data recording and programmable control over all aspects of the separation procedure.

The PowerPrep GPC system can automate pesticide sample cleanup procedures specified by the US EPA and FDA methods. The modularity and expansion features of the GPC-Prep allow the user to expand the system for use in other applications such as the separation of Dioxins and PCBs from environmental and biological samples.

Applications
Pesticides, PCBs, PAHs, Dioxins, Furans

Supported EPA Methods
Methos 3649 Gel Permeation Cleanup

Cost Effective Expandable Systems
The PowerPrep GPC system fits into the smallest budget. With its modular design, you can cost effectively automate your sample clean-up procedure by purchasing one module and expand it to 5, 10, 15 or up to 40 samples as needed.

The PowerPrep GPC system provides major savings in solvents and glassware as compared with the amounts typically required in manual procedures. With FMS's low cost pre-packed Teflon columns the savings become more substantial.

The PowerPrep GPC/ Parallel System is modular & expandable from one to four modules processing 2 to 8 samples simultaneously

PowerPrep GPC /Sequential system processes 5 samples sequentially

Columns:

Glass Columns
These columns are packed with SDVB resin beads. The innovative design of these glass columns allows you to adjust the gel bed height for better reliability and turbulence-free applications.

Teflon Columns
FMS's pre-packed disposable Teflon columns employ a proprietary design that allows up to a 70% solvent reduction. These columns are easy to use and dramatically reduce elution time.

Specifications

Dimensions: 15" W x 18" D x 35" H

Weight: 65 lbs.

Pump: Piston Displacement

Flow rate: 0.2 to 15ml/minute

Electrical Input: 110/220 Volts, 50/60 HZ
Controller: PC Integrated Touch Screen Control

Ordering information

PowerPrep GPC / Parallel

Part number	Description
PowerPrep GPC/P2	2 sample GPC, 1 module
PowerPrep GPC/P4	4 sample GPC, 2 modules
PowerPrep GPC/P6	6 sample GPC, 3 modules
PowerPrep GPC/P8	8 sample GPC, 4 modules

PowerPrep GPC/Sequential

PowerPrep GPC/S5 5	sample GPC ,1 module
PowerPrep GPC/S10	10 sample GPC, 2 modules
PowerPrep GPC/S15	15 sample GPC, 3 modules
PowerPrep GPC/S20	20 sample GPC, 4 modules
PowerPrep GPC/S25	25 sample GPC, 5 modules
PowerPrep GPC/S30	30 sample GPC, 6 modules
PowerPrep GPC/S35	35 sample GPC, 7 modules
PowerPrep GPC/S40	40 sample GPC, 8 modules

GPC Columns & Accessories

GPC-UV-254 UV detector, 254 nm

TEF-COL-300 GPC Pre-packed Teflon column 300 x 20 mm

TEF-COL-150 GPC Pre-packed Teflon column 150 x 20 mm

GLS-COL-450 GPC Glass column 450 x 25m mm

STR-DVI-100 Styrene-divinylebenzene
Copolymer,100 grams

SuperVap® Family of Automated Direct-to-Vial Concentration and Evaporation

The SuperVap® Small Volume is a standalone automated direct-to-vial concentration system that replaces older, manual techniques such as KD, nitrogen blow down and water baths. The SuperVap Small Volume direct-to-vial concentration system is designed to simplify, improve and increase laboratory productivity by automating the manual steps in your sample evaporation/concentration process. It automates the time consuming steps involved in manual sample concentration, lowers labor costs and eliminates errors.

The SuperVap concentrator sets a new standard for automating rapid sample evaporation and concentration for producing consistent, reliable results. The SuperVap automated concentration system is ideal for the analysis of pesticides, herbicides, persistent organic pollutants, PCBs

Automatic time-based or endpoint detection for nitrogen shut off for each vessel

Sample sizes from 1ml to 50ml

Measurements-Concentration/Evaporation Vessels in 500 µL, 1ml, and direct-to-a GC Vial or to dryness

Concentrates up to 12 20ml, 40ml, 60ml vials or 50ml concentration vessels with tips.

Concentrates up to 24 2ml or 4ml vials.

Uses no water, dry heating assembly makes solvent recovery simple

HEPA/carbon filter eliminates outside contamination

SuperVap® 6 250ml

The SuperVap® system is an automated, standalone, direct-to-vial concentrator that replaces older techniques such as KD, nitrogen blow down and water baths. By automating what were once manual evaporation and concentration processes, the SuperVap concentration system accelerates your sample throughput, lowers labor costs, and improves the consistency of your results by eliminating the variability inherent in manual sample prep procedures.

The SuperVap concentrator sets new a standard for consistency, speed, and reliability of results for an automated sample evaporation and concentration system. It is ideal for the analysis of pesticides, herbicides, Persistent Organic Pollutants (POPs), PCBs, PAHs, pharmaceutical byproducts, and personal care byproducts as well as many other applications. The programmable SuperVap concentrator is a dry, waterless concentrator that can preheat as well as ramp up to final temperature. It automatically senses when the extract is being delivered to each vessel, starts the blow down and then shuts off the nitrogen when final volume is achieved. The concentrated samples are then automatically transferred directly to a vial, eliminating the errors that occur during manual transfer.

Easy-to-Use
The SuperVap concentration system uses a touch screen display for programming, storing, and running methods. Real-time plotting of temperature readings are displayed throughout the process. Simply touch a point on the plot and instantly see the temperature of that point.

Reduces Errors
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

High Recovery of All Analytes
The SuperVap system provides direct-to-vial concentration with automatic endpoint detection and Nitrogen shut off for each vessel

Uses No Water
Uses a robust waterless, dry bath with no electronics submerged in water. It easily and inexpensively captures solvents.

Concentrates up to 6 Samples
Sample Sizes up to 250ml.

Compact Size

Minimizes Contamination
An integrated HEPA/Carbon filter eliminates outside contamination.

Inexpensive Glassware
Economically priced vessels with 500 µL, 1ml and direct-to-vial endpoints.

Fully Automated
Automatic endpoint detection, nitrogen shutoff, and alarm for each vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process.

Documentation
Every method and run is documented and stored on the SuperVap system for easy retrieval for documentation. A temperature log for each run is also saved and may be downloaded to a PC via a USB port.

Stand Alone or Integrated
The SuperVap concentrator can be easily integrated into existing FMS sample preparation systems. Integration allows for PC-based control and automatic solvent exchange.

SuperVap® 12 50ml

The SuperVap® system is an automated, standalone, direct-to-vial concentrator that replaces older techniques such as KD, nitrogen blow down and water baths. By automating what were once manual evaporation and concentration processes, the SuperVap concentration system accelerates your sample throughput, lowers labor costs, and improves the consistency of your results by eliminating the variability inherent in manual sample prep procedures.

The SuperVap, 12 position, 50ml Direct-to-vial Evaporation/Concentration system is the ideal sample preparation solution for Solid Phase Extraction (SPE) and Pressurized Liquid Extraction (PLE) methods requiring the evaporation and concentration of liquid extracts. Typical extractions needing evaporation and/or concentration to final volume are those from drinking water, waste water, juice, milk, urine, and human serum. The system uses evaporation/concentration vessels that handle liquid extraction volumes from 1ml to 40ml with final volume tips of 500 µL or 1ml, or you can choose GC vials. The SuperVap Evaporation/Concentration system is designed to automatically evaporate and concentrate 12 samples simultaneously. Sensors detect when the end point is reached and shut off each individual position while triggering an audible alarm to alert the user.

Easy-to-Use
The SuperVap concentration system uses a touch screen display for programming, storing, and running methods. Real-time plotting of temperature readings are displayed throughout the process. Simply touch a point on the plot and instantly see the temperature of that point.

Reduces Errors
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

High Recovery of All Analytes
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

Uses No Water
Uses a robust waterless, dry bath with no electronics submerged in water. It easily and inexpensively captures solvents.

Concentrates up to 12 Samples
Sample Sizes up to 50ml in a concentration vessel.

Compact Size

Minimizes Contamination
An integrated HEPA/Carbon filter eliminates outside contamination.

Inexpensive Glassware
Economically priced vessels in with 500 µL, 1ml and direct-to-vial endpoints.

Fully Automated
Automatic endpoint detection, nitrogen shutoff, and alarm for each vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process.

Documentation
Every method and run is documented and stored on the SuperVap system for easy retrieval for electronic documentation. A temperature log for each run is also saved and may be downloaded to a PC via a USB port.

Stand Alone or Integrated
The SuperVap concentrator can be easily integrated into existing FMS sample preparation systems. Integration allows for PC-based control and automatic solvent exchange.

SuperVap® 12 20ml

The SuperVap®, 12 position, 20ml vial, Evaporation/Concentration system is the ideal solution for performing the final evaporation and concentration step for solid phase extraction (SPE) and pressurized liquid extraction (PLE) (ASE) sample preparation methods. Typical extractions requiring evaporation or concentration to final volume are drinking water, waste water, juice, milk, urine, and human serum. The system uses 20ml evaporation/concentration vials that handle liquid extract volumes up to 20ml. The system is designed to automatically evaporate and concentrate 12 samples simultaneously and will shut off when the programmed end time is reached, which also triggers an audible alarm.

Easy-to-Use
The SuperVap concentration system uses a touch screen display for programming, storing, and running methods. Real-time plotting of temperature readings are displayed throughout the process. Simply touch a point on the plot and instantly see the temperature of that point.

Reduces Errors
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

High Recovery of All Analytes
The SuperVap system provides concentration with automatic endpoint detection and Nitrogen shut off for each vessel.

Uses No Water
Uses a robust waterless, dry bath with no electronics submerged in water. It easily and inexpensively captures solvents.

Concentrates up to 12 Samples
Sample Sizes up to 20ml.

Compact Size

Minimizes Contamination
An integrated HEPA/Carbon filter eliminates outside contamination.

Inexpensive Glassware
Economically priced vessels, 20ml Vial

Fully Automated
Automatic nitrogen shutoff, and alarm for vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process.

Documentation
Every method and run is documented and stored on the SuperVap system for easy retrieval for documentation. A temperature log for each run is also saved and may be downloaded to a PC via a USB port.

Stand Alone or Integrated
The SuperVap concentrator can be easily integrated into existing FMS sample preparation systems. Integration allows for PC-based control and automatic solvent exchange.

SuperVap® 12 40ml

The SuperVap® 12 position 40ml vial Evaporation/Concentration system is the ideal solution for performing the final evaporation and concentration step for solid phase extraction (SPE) and pressurized liquid extraction (PLE) (ASE) sample preparation methods. Typical extractions requiring evaporation or concentration to final volume are drinking water, waste water, juice, milk, urine, and human serum. The system uses 40ml evaporation/concentration vials that handle liquid extraction volumes up to 40ml, with final volumes between dryness and 40ml. The final volume is reached automatically by programming an end point time. The system is designed to automatically evaporate and concentrate 12 samples simultaneously and will shut off when the programmed end time is reached, which also triggers an audible alarm.

Easy-to-Use
The SuperVap concentration system uses a touch screen display for programming, storing, and running methods. Real-time plotting of temperature readings are displayed throughout the process. Simply touch a point on the plot and instantly see the temperature of that point.

Reduces Errors
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

High Recovery of All Analytes
The SuperVap system provides concentration with automatic endpoint detection and Nitrogen shut off for each vessel.

Uses No Water
Uses a robust waterless, dry bath with no electronics submerged in water. It easily and inexpensively captures solvents.

Concentrates up to 12 Samples
Sample Sizes up to 40ml.

Compact Size

Minimizes Contamination
An integrated HEPA/Carbon filter eliminates outside contamination.

Inexpensive Glassware
Economically priced vessels in 40ml Vial

Fully Automated
Automatic nitrogen shutoff, and alarm for each vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process

Documentation
Every method and run is documented and stored on the SuperVap system for easy retrieval for documentation. A temperature log for each run is also saved and may be downloaded to a PC via a USB port.

Stand Alone or Integrated
The SuperVap concentrator can be easily integrated into existing FMS sample preparation systems. Integration allows for PC-based control and automatic solvent exchange.

SuperVap® 12 60ml

The SuperVap® 12 position 60ml vial Evaporation/Concentration system is the ideal solution for the final evaporation and concentration step for ASE types of liquid sample preparation. Typical extractions requiring evaporation or concentration to a final volume are drinking water, waste water, juice, milk, urine, and human serum. The system uses 60ml vials for evaporation/ concentration and can handle liquid extract volumes up to 60ml with final volumes. The final volume is reached automatically by programming an end time. The system is designed to automatically evaporate and concentrate 12 samples simultaneously and will shut off when the programmed end time is reached, which triggers an audible alarm.

Easy-to-Use
The SuperVap concentration system uses a touch screen display for programming, storing, and running methods. Real-time plotting of temperature readings are displayed throughout the process. Simply touch a point on the plot and instantly see the temperature of that point.

Reduces Errors
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

High Recovery of All Analytes
The SuperVap system provides concentration with automatic endpoint detection and Nitrogen shut off for each vessel.

Uses No Water
Uses a robust waterless, dry bath with no electronics submerged in water. It easily and inexpensively captures solvents.

Concentrates up to 12 Samples
Sample Sizes up to 60ml.

Compact Size

Minimizes Contamination
An integrated HEPA/Carbon filter eliminates outside contamination.

Inexpensive Glassware
Economically priced vessels, 60ml Vial.

Fully Automated
Automatic nitrogen shutoff, and alarm for each vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process.

Documentation
Every method and run is documented and stored on the SuperVap system for easy retrieval for documentation. A temperature log for each run is also saved and may be downloaded to a PC via a USB port.

Stand Alone or Integrated
The SuperVap concentrator can be easily integrated into existing FMS sample preparation systems. Integration allows for PC-based control and automatic solvent exchange.

SuperVap® 24 2ml

The SuperVap® 24 position, 2ml vial Evaporation/Concentration system is the ideal solution for the final evaporation and concentration step for many sample preparation methods. The system uses 2ml vials that handle liquid extract volumes up to 2ml with final volumes to final dryness or a pre-determined volume. The final volume is achieved when the system automatically reaches the end of its programmed time. Typical extractions requiring evaporation or concentration to final volume are Metabolomics, POPs, or any extraction where a final volume manual evaporation techniques are required to finish the process. The system is designed to automatically evaporate and concentrate 24 samples simultaneously. Shut off occurs when the programmed end point time is reached which triggers an audible alarm.

Easy-to-Use
The SuperVap concentration system uses a touch screen display for programming, storing, and running methods. Real-time plotting of temperature readings are displayed throughout the process. Simply touch a point on the plot and instantly see the temperature of that point.

Reduces Errors
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

High Recovery of All Analytes
The SuperVap system provides concentration with automatic endpoint detection and Nitrogen shut off for each vessel.

Uses No Water
Uses a robust waterless, dry bath with no electronics submerged in water. It easily and inexpensively captures solvents.

Concentrates up to 24 Samples
Sample Sizes up to 2ml.

Compact Size

Minimizes Contamination
An integrated HEPA/Carbon filter eliminates outside contamination.

Inexpensive Glassware
Economically priced vessels, 2ml GC Vials

Fully Automated
Automatic nitrogen shutoff, and alarm for each vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process.

Documentation
Every method and run is documented and stored on the SuperVap system for easy retrieval for documentation. A temperature log for each run is also saved and may be downloaded to a PC via a USB port.

Stand Alone or Integrated
The SuperVap concentrator can be easily integrated into existing FMS sample preparation systems. Integration allows for PC-based control and automatic solvent exchange.

SuperVap® 24 4ml

The SuperVap® 24 position, 4ml vial, Evaporation/Concentration system is the ideal solution for performing the final evaporation and concentration step for a variety of sample preparation methods. The system uses 4ml vials that handle liquid extract volumes up to 4ml with final volumes to final dryness or a predetermined volume. The final volume is automatically achieved when the system reaches the end of its programmed time. Typical extractions requiring evaporation or concentration to final volume are Metabolomics, POPs, or any extraction where final volume manual evaporation techniques are required to finish the process. The system is designed to automatically evaporate and concentrate 24 samples simultaneously. Shut off occurs when the programmed end point time is reached which triggers an audible alarm.

Easy-to-Use
The SuperVap concentration system uses a touch screen display for programming, storing, and running methods. Real-time plotting of temperature readings are displayed throughout the process. Simply touch a point on the plot and instantly see the temperature of that point.

Reduces Errors
The SuperVap system performs the entire evaporation and concentration process, automatically, delivering consistent, reproducibly high recoveries for all analytes. Unattended operation of the sample prep process saves time, reduces labor costs, glassware and solvents.

High Recovery of All Analytes
The SuperVap system provides direct-to-vial concentration with automatic endpoint detection and Nitrogen shut off for each vessel.

Uses No Water
Uses a robust waterless, dry bath with no electronics submerged in water. It easily and inexpensively captures solvents.

Concentrates up to 24 Samples
Sample Sizes up to 4ml.

Compact Size

Minimizes Contamination
An integrated HEPA/Carbon filter eliminates outside contamination.

Inexpensive Glassware
Economically priced vessels, 4ml Vials

Fully Automated
Automatic nitrogen shutoff, and alarm for each vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process.

Documentation
Automatic endpoint detection, nitrogen shutoff, and alarm for each vessel. Programmable heat ramp and nitrogen settings for precise control of the concentration and evaporation process.

Stand Alone or Integrated
The SuperVap concentrator can be easily integrated into existing FMS sample preparation systems. Integration allows for PC-based control and automatic solvent exchange.

Specifications

Dimensions:	13” W x 13” D x 12” H
Weight:	20 lbs.
Gas requirements:	Nitrogen - 20 PSI minimum
Electrical input:	110/220 Volts, 50/60 HZ
Controller:	Integrated Touch Screen Control
Bath:	Dry

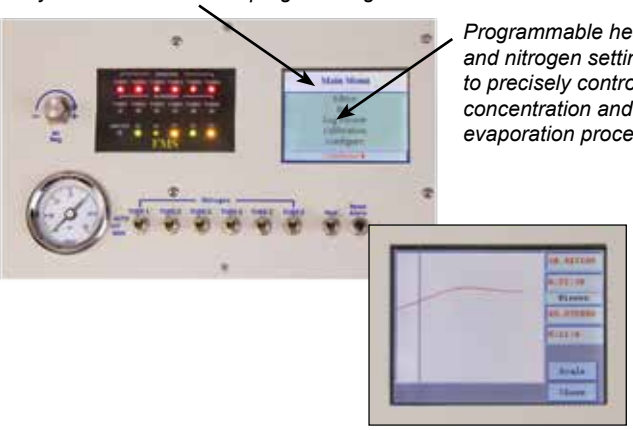
Ordering information

Concentrator and Accessories

Part Number	Description
SuperVap-6/SC	**SuperVap Concentrator Standalone 6 Position with 250ml concentration tubes**
SVAP-TUB-200M-1000	250ml concentrator tube, 1ml tip
SVAP-TUB-200M-500	250ml concentrator tube, standard 500 µL tip
SVAP-TUB-200M-GC	250ml concentrator tube, standard GC vial tip
SVAP-UNI-TFZ	Tefzel GC vial union
SVAP-UNI-WSR	Teflon GC vial union washer, pack of 100
SVAP-VIAL-GC	GC vial
FMS-TR-2006	6 Position concentrator tube rack for 250ml tube
FMS-TR-2012	12 Position concentrator tube rack for 250ml tube
HEP-FIL-200	Hepa filter
CAR-FIL-200	Carbon filter

SuperVap-12/SC	**SuperVap Concentrator Standalone 12 Position with 50ml concentration tubes**
SVAP-TUB-060M-1000	50ml concentrator tube, 1ml tip
SVAP-TUB-060M-500	50ml concentrator tube, standard 500 µL tip
SVAP-TUB-060M-GC	50ml concentrator tube, standard GC vial tip

Easy-to-use touch screen programming



Programmable heat ramp and nitrogen settings to precisely control the concentration and evaporation process

SuperVap-12/SV	**SuperVap Concentrator Standalone 12 Position for 20, 40, 60ml vials (no block)**
SVAP-BLK-12-020	SuperVap concentrator block -12 position with 20ml concentration vials
SVAP-BLK-12-040	SuperVap concentrator block - 12 position with 40ml concentration vials
SVAP-BLK-12-060	SuperVap concentrator block -12 position with 60ml concentration vials
SVAP-VIA-020M-000	20mL concentrator vial, pack of 500
SVAP-VIA-040M-000	40ml concentrator vial, pack of 500
SVAP-VIA-060M-000	60ml concentrator vial, pack of 500

SuperVap-24/SV	**SuperVap Concentrator Standalone 24 Position for 2 & 4ml vials (no block)**
SVAP-BLK-24-002	SuperVap concentrator block - 24 position with 2ml concentration vials
SVAP-BLK-24-004	SuperVap concentrator block - 24 position with 4ml concentration vials
SVAP-VIA-002M-000	2ml concentrator vial, pack of 100
SVAP-VIA-004M-000	4ml concentrator vial, pack of 100

In order from left to right

50ml tube with tip

50ml tube with tip

40ml vial

20ml vial

2ml vial

SuperVap® Solvent Recovery System

The SuperVap Solvent Recovery System is designed to recover solvents from the SuperVap family of Concentrators/ Evaporators. It uses no refrigerant. It uses solvent resistant bottles for capturing the recovered solvent for disposal. It has a built in storage area for the solvent recovery bottle. Some of the solvents that it can recover are Acetone, Acetonitrile, Benzene, Ethanol, Ethyl Acetate, Hexane, Methanol, Methylene Chloride, MTBE, Petroleum Ether, and Toluene.

Reduce the laboratory's solvent vapor emissions aiding in regulatory compliance

Allows solvents to be captured for recycling saving on disposal costs

Reduce exposure to harmful solvent vapors

Requires no refrigerant

Small footprint saving valuable space

Recovered solvent storage area

Temperature Display

Ordering Information

SVAP - SRS – 110	SuperVap Solvent Recovery System 110V
SVAP - SRS – 220	SuperVap Solvent Recovery System 220V

TotalPrep® Family of Total Sample Prep Solutions Integrated Sample Extraction, Cleanup, and Concentration Systems

Imagine performing the total sample preparation process for liquids and solids automatically, in a fraction of the time it takes today.

FMS introduces a new family of integrated, economical "Total Solution" sample preparation systems that combine three sample prep steps into one automated process. TotalPrep systems perform extraction, cleanup, and concentration for eight samples simultaneously in less than two hours, while delivering the highest recoveries and best results for all target analytes. The systems are programmed and controlled via an easy-to-use touch screen and methods are stored on SD cards. Running a single sample preparation step, such as extraction, sample cleanup or concentration is also an option.

The TotalPrep® S system for solid samples
PLE® Pressurized Liquid Extraction Module
PowerPrep® Multi-column Sample Cleanup Module
SuperVap® Evaporation and Solvent Exchange Module

Simultaneously perform eight sample extractions, cleanups, and concentrations in less than two hours.
The TotalPrep systems are integrated, economical sample preparation systems that combine the sample extraction, cleanup, and evaporation steps into one automated process.

Unattended sample preparation.
Load a solid sample into the extraction cell, or cartridge in the case of liquid samples, install the cleanup columns on the system, push the "Run" button and walk away. The TotalPrep systems will automatically perform the entire sample preparation process unattended, in virtually one step. The final fraction is ready for analysis by GC, LC, or GC/LC/MS.

Same day turn around for multiple samples.
Because they process eight samples in parallel − simultaneous extraction, cleanup, and concentration − TotalPrep systems are able to turn around up to 24 samples in a day.

The TotalPrep® L system for solid samples
TurboTrace r parallel solid phase extraction system
PowerPrep® Multi-column Sample Cleanup Module
SuperVap® Evaporation and Solvent Exchange Module

Easy sample preparation for POP analysis
TotalPrep systems perform complete sample preparation for eight samples automatically and unattended producing the final extract for GC, LC, and GC/LC/MS analysis. They use pre-packed disposable cleanup columns as well as ready-to-use disposable extraction cell end caps. The integrated design of TotalPrep systems means there is no need transfer samples from one system to another for additional processing. These features allow for “Raw sample in, GC, LC, and GC/LC/MS ready fraction out”, and minimize the need to wash glassware.

Automates EPA SW846 and 40 CFR 136 methods
TotalPrep systems have been approved by the US EPA as an automated alternative to SW- 846 and 40 CFR 136 methods for POPs analysis.

Reduce solvent and glassware usage
By using inexpensive, pre-packed, disposable clean-up columns, filtration cartridges, and concentration tubes these systems also use disposable extraction cell end caps, greatly reducing the amount of contaminated parts that need to be washed. The greater efficiency with which the TotalPrep systems perform extraction and cleanup reduces solvent consumption.

Dramatic savings in time and resources
TotalPrep systems perform the complete preparation of eight samples in just a few hours, instead of days. This capability results in time and labor savings.

Low background automated sample prep
The advanced, closed loop system design combined with pre-packed, disposable columns deliver cleaner backgrounds and eliminate cross contamination.

Wide range of inexpensive extraction cell sizes
A wide range of inexpensive stainless steel extraction cell sizes are available for TotalPrep systems. Currently available sizes include 5ml, 10ml, 20ml, 40ml, and 100ml. They are made of either 316 stainless steel, or the special acid and alkali resistant alloy stainless steel. With their flexible design and construction, TotalPrep Systems can accommodate the whole range of extraction cell sizes; from the 5ml cell all the way to the 100ml, in the same system.

Wide range of pre-packed, disposable cleanup columns
A wide variety of economical, pre-packed, disposable cleanup columns are available for use with TotalPrep systems. These columns are configured in a variety of sizes and packing material types − from standard multi-layered A-B-N silica to custom made columns.

Disposable Columns used for Dioxins and PCBs, PBDEs analysis:

1. Multi-layered A-B-N silica
2. Alumina
3. Carbon
4. High capacity acid silica (optional used for fatty samples, this column removes 3-5 grams fat

Disposable or reusable extraction filtration end caps
In high-throughput laboratories where fast sample turn around is the goal, disposable Teflon end caps eliminate the need to wash and assemble end caps. Reusable stainless steel end caps may be used when saving time and labor is not the overriding issue.

Modular and expandable
TotalPrep systems are modular and can be configured in from one to six sample configurations. The flexible design of TotalPrep systems allows laboratories to acquire a single sample configuration inexpensively and then expand it to two, three, four, five, or a six sample configuration as sample throughput demand grows. Laboratory staff can easily connect expansion modules to the existing system in less than an hour. This design and construction make TotalPrep systems easy to expand and maintain.

Ideal for method development
TotalPrep Systems are the ideal method development tool for today’s laboratories. Because they utilize a wide range of extraction cell sizes, cleanup columns, and multiple solvent selection valves they are extremely capable tools for experimenting with different sample sizes, solvents, flow rates, clean-up packing materials, extraction pressures, and temperatures.

Robust and maintainable
The modular, flexible design of TotalPrep systems virtually eliminates downtime and makes them the most easy to maintain systems in today’s laboratories. Each system channel operates independently of the other channels, so if one channel malfunctions the others still work. Should a module malfunction, laboratory personnel can replace it on-site and the exposed construction makes parts accessible for easy replacement. The large-bore plumbing of the extraction module makes it virtually clog free

Ordering Information

TRP/1	Total Rapid Prep System TRP 1 for one Sample
TRP/2	Total Rapid Prep System TRP 2 for two Samples
TRP/3	Total Rapid Prep System TRP 3 for three Samples
TRP/4	Total Rapid Prep System TRP 4 for four Samples
TRP/5	Total Rapid Prep System TRP 5 for five Samples
TRP/6	Total Rapid Prep System TRP 6 for six Samples

Total Solution Sample Prep

Extraction • Cleanup • Concentration

PLE®
Pressurized
Liquid
Extraction

SPE
Solid Phase
Extraction

PowerPrep®
Multi-Column
Cleanup System

TotalPrep® S

TotalPrep® L

TRP® System
Total Rapid Prep

From Sample to Vial

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