

EZSpeTM

*Simple & Quick Solid Phase Extraction
for Water & Waste Water Analysis*

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for Water & Waste Water Analysis*

With EZSpe you can perform solid phase extractions for 6 samples in less than 50 minutes achieving high recoveries and excellent precision for all analytes.

Simple to Operate

No Computer or Electronics

Fast

Runs 6 Samples in 20 ~ 50 min (depending on sample size)

High Throughput

Runs 6 Samples in Parallel

Flexible

Uses All SPE Cartridge Sizes

Semi Automated

Vacuum Sample Loading & Valve Selection for Separating Aqueous and Organic Waste

Quality Consumables

Guaranteed Certified Cartridges

Bottle Rinse

Automated Bottle Rinse

In-Line Drying

Elution In-line Extract Drying

Reliable

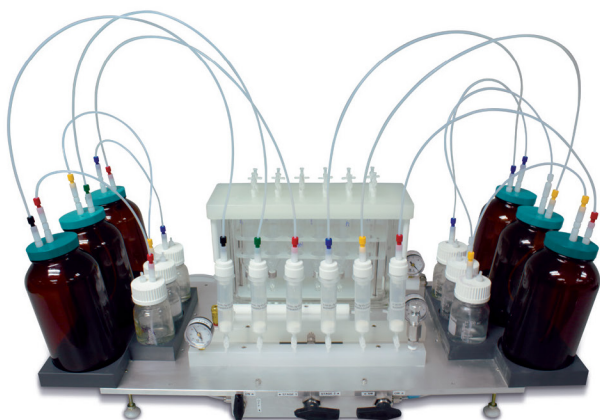
No Maintenance Required

Zero Cross-Contamination

No Shared Tubing & Fittings

After 30 years of leading automation in the field of Dioxin & PCBs analysis, FMS introduces EZSpe to further simplify the Solid Phase Extraction process and make it easier to perform. The EZSpe impressive performance allows laboratories to reduce turnaround time and increase quality of the water & waste water analysis while reducing the cost.

Using vacuum & nitrogen, the EZSpe automatically loads the samples, rinses the sample bottle and delivers the solvent to the SPE cartridges. The analytes of interest are extracted and then dried using a sodium sulfate cartridge to remove all water. The final extract can be delivered directly to the "Direct to GC vial Vessel" ready for final concentration in the FMS SuperVap®. The process saves both labor and time.



With the EZSpe ABN you can run multi cartridge, multi fractionation applications for any SPE method requiring more than one cartridge or fraction.

The EZSpe ABN system is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The EZSpe ABN system uses existing manual techniques. ABN Methods or EPA Methods 625 and 8270D call for the extraction and analysis of semi-volatile analytes in various matrices. Target analytes mentioned in the method cover a wide range of compound classes resulting in reporting lists that often approach hundreds of compounds.

Applications:

Drinking Water

Waste Water

Blood

Milk

Beverages

**Recoveries for a number of
525.3 compound classes**

1,3-dimethyl-	102.8
nitrobenzene	92.6
Acenaphthylene	106.8
Alachlor	100.6
Alpha Chlordane	100.1
Atrazine Butachlor	104.9
Butylate Carboxin	99.5
Chrysene-d12 Cycloate	75.0
DDD	91.1
DDE	114.4
Diazinon	105.0
Dieldrin	101.1
Dimethyl phthalate	97.4
Disulfoton Endosulfan I	101.1
Endrin	105.5
Heptachlor epoxide	91.0
Isophorone	101.4
Methoxychlor	100.2
Metolachlor	111.9
Nanopropamide	103.4
Perylene-d12	99.8
Phenamiphos	92.0
Phenanthrene	00.4
Phenanthrene-d10	105.9
Prometon Prometryn	103.4
Pyrene-d10 Simazine	104.8
Terbufos Trans-	96.8
Nonachlor Trifluralin	98.1

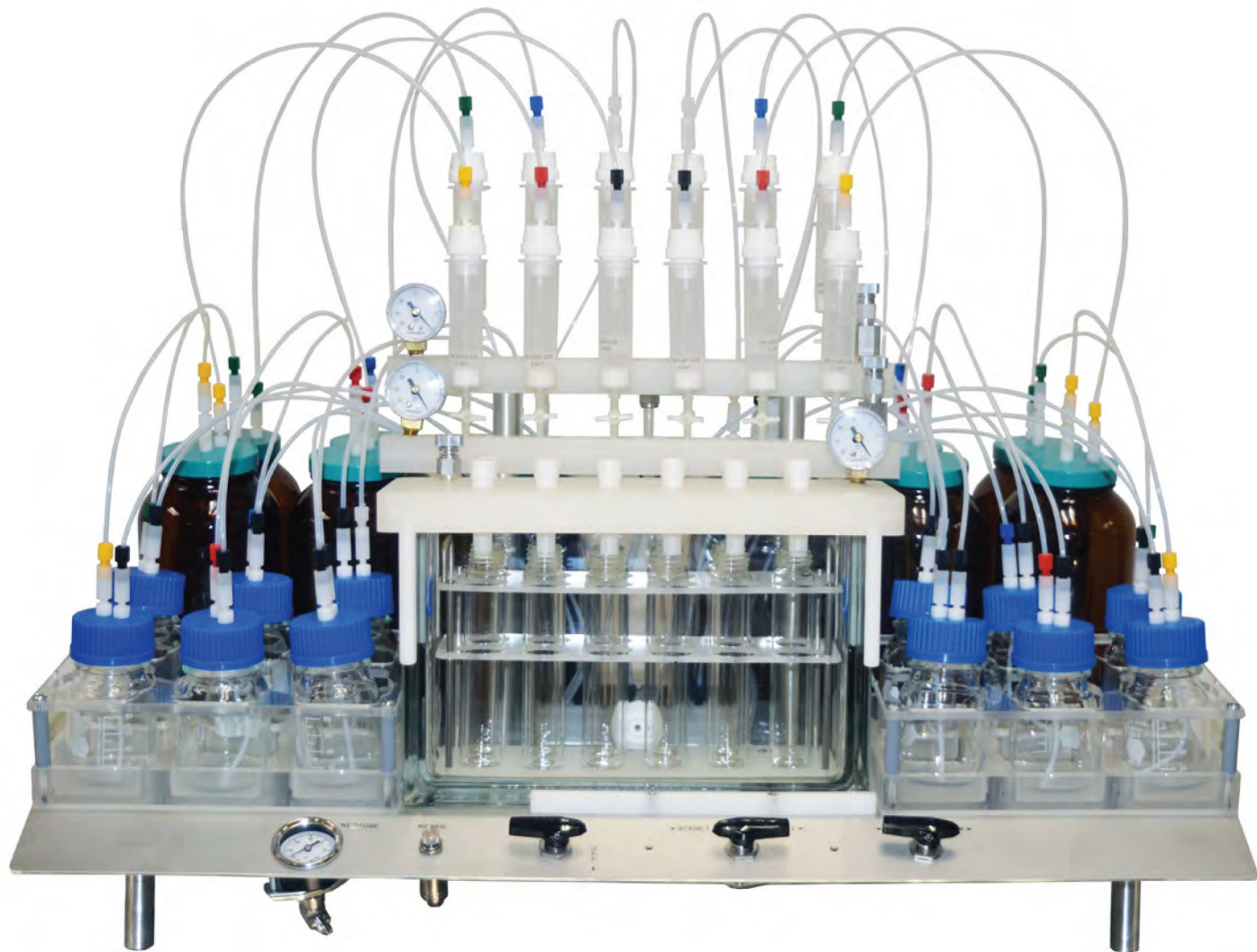
Supports EPA Methods :

EPA Method 506	Phthalates and Adipate Esters
EPA Method 508.1	Chlorinated Pesticides, Herbicides, and Organohalides
EPA Method 515.2	Chlorinated Acids
EPA Method 521	Nitrosamines
EPA Method 525.2	Semi-volatiles
EPA Method 526	Semi-volatiles
EPA Method 527	Selected Pesticides and Flame Retardants
EPA Method 528	Phenols
EPA Method 529	Explosives
EPA Method 532	Phenylurea Compounds
EPA Method 535	Chloroacetanilide and other Acetamide Herbicides
EPA Method 548.1	Endothall
EPA Method 549.2	Diquat and Paraquat
EPA Method 550.1	PAH's
EPA Method 552.1	Haloacetic Acids and Dalapon
EPA Method 553	Benzidines and Nitrogen Containing Pesticides
EPA Method 608	Chlorinated Pesticides and PCB's
EPA Method 1613	Dioxin
EPA Method 1664A	Oil and Grease and SGT-HEM
EPA Method 1668A	Toxic PCB's by Isotope Dilution and GC/MS
EPA Method 1694	Pharmaceutical and Personal Care Products
EPA Method 8061	Phthalate esters
EPA Method 8081	TCLP Organochlorine pesticides
EPA Method 8082	PCB's
EPA Method 8095	Explosives
EPA Method 8141	Organophosphorus pesticides
EPA Method 8270	Semi Volatiles
EPA Method 8321	TCLP Phenoxyacid herbicides
EPA Method 8330	Nitroaromatics / Nitramines

"Direct-to-Vial Concentration"

The SuperVap-12 standalone direct-to-vial evaporation/concentration system is the ideal solution for performing the final evaporation and concentration step. SuperVap® evaporates the extracts and delivers final extracts in GC vials ready for GC/MS analysis.





EZSPE[®]

*Simple & Quick Solid Phase Extraction
for Water & Waste Water Analysis*

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With EZSPE you can perform solid phase extractions for 12 samples in less than 50 minutes achieving high recoveries and excellent precision for all analytes.

Simple to Operate	No Computer or Electronics
Fast	Runs 6-12 Samples in 20 ~ 50 min (depending on sample size)
High Throughput	Runs 6-12 Samples in Parallel
Flexible	Uses All SPE Cartridge Sizes
Semi Automated	Vacuum Sample Loading & Valve Selection for Separating Aqueous and Organic Waste
Quality Consumables	Guaranteed Certified Cartridges
Bottle Rinse	Automated Bottle Rinse
In-Line Drying	Elution In-line Extract Drying
Reliable	No Maintenance Required
Zero Cross-Contamination	No Shared Tubing & Fittings

After 30 years of leading automation in the field of Dioxin & PCBs analysis, FMS introduces EZSPE to further simplify the Solid Phase Extraction process and make it easier to perform. The EZSPE's impressive performance allows laboratories to reduce turnaround time and increase quality of the water & waste water analysis while reducing the cost.

Using vacuum & nitrogen, the EZSPE automatically loads the samples, rinses the sample bottle and delivers the solvent to the SPE cartridges. The analytes of interest are extracted and then dried using a sodium sulfate cartridge to remove all water. The final extract can be delivered directly to the "Direct to GC vial Vessel" ready for final concentration in the FMS SuperVap[®]. The process saves both labor and time.

Applications:

Drinking Water

Waste Water

Blood

Milk

Beverages



With the EZSPE you can run multi cartridge, multi fractionation applications for any SPE method requiring more than one cartridge or fraction.

The EZSPE system is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The EZSPE system uses existing manual techniques. EPA Methods 625 and 8270D call for the extraction and analysis of

semi-volatile analytes in various matrices. Target analytes mentioned in the method cover a wide range of compound classes resulting in reporting lists that often approach hundreds of compounds.

EPA Method 508 Recoveries

Compound Name	Average %
TCMX	70
Alpha - BHC	81.6
Beta- BHC	93.9
Gamma- BHC (Lindane)	83.1
Delta- BHC	98.9
Heptachlor	82.5
Aldrin	80
Heptachlor Epoxide	89.8
Endosulfan I	87.8
4, 4- DDE	84
Dieldrin	85.9
Endrin	70.6
Endosulfan II	90.5
Endrin Aldehyde	119.1
4, 4 -DDD	81.7
Endosulfan sulfate	95
4,4 -DDT	96.2
Endrin Ketone	110.9
Methoxychlor	92.5
PCB-209	77.3

EPA Method 8270 Recoveries

Compound Name	Average (%)
Acenaphthylene	96
Benzyl butyl phthalate	93
Bis(2-ethylhexyl)phthalate	85
2-Chloronaphthalene	93
Di-n-butylphthalate	93
1,3-Dichlorobenzene	83
Diethylphthalate	108
Dimethylphthalate	104
Hexachloroethane	86
Naphthalene	91
2-Chlorophenol	100
2-Nitrophenol	94
Phenol	93
N-Nitrosodimethylamine	50
Aniline	91
Benzyl Alcohol	93
4-Chloroaniline	87
1,4-Dinitrobenzene	84
2-Methylphenol	93
3/4-Methylphenol	94
1-Methylnaphthalene	94
2-Methylnaphthalene	95
3-Nitroaniline	89
2-Nitroaniline	95
Pyridine	95

EPA Method 525.3 Recoveries

Compound Name	Average (%)
1,3-dimethyl-nitrobenzene	102.8
Acenaphthylene	92.6
Alachlor	106.8
Alpha Chlordane	100.6
Atrazine	120.1
Butachlor	124.9
Butylate	119.5
Carboxin	75.0
Chrysene-d12	91.1
Cycloate	114.4
DDD	109.0
DDE	101.1
Diazinon	97.4
Dieldrin	101.1
Dimethyl phthalate	105.5
Disulfoton	91.0
Endosulfan I	121.4
Endrin	120.2
Heptachlor epoxide	111.9
Isophorone	108.4
Methoxychlor	99.8
Metolachlor	112.0
Nanopropamide	110.4
Perylene-d12	105.9
Phenamiphos	109.4
Phenanthrene	104.8
Phenanthrene-d10	96.8
Prometon	119.1
Prometryn	122.8
Pyrene-d10	101.0
Simazine	123.0
Terbufos	107.8
Trans-Nonachlor	97.3
Trifluralin	107.7

Supports EPA Methods :

EPA Method 506	Phthalates and Adipate Esters
EPA Method 508.1	Chlorinated Pesticides, Herbicides, and Organohalides
EPA Method 515.2	Chlorinated Acids
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"Direct-to-Vial Concentration"

The SuperVap-12 standalone direct-to-vial evaporation/concentration system is the ideal solution for performing the final evaporation and concentration step. SuperVap® evaporates the extracts and delivers final extracts in GC vials ready for GC/MS analysis.





EZPFC™

*Simple & Quick Solid Phase Extraction
for Water & Waste Water
PFAS/PFOS/PFOA Analysis*

EZPFC™

Simple & Quick Solid Phase Extraction for Water & Waste Water PFAS/PFOS/PFOA Analysis

With EZPFC you can perform solid phase extractions for 6 samples in less than 50 minutes achieving high recoveries and excellent precision for all analytes.

Simple to Operate

No Computer or Electronics

Fast

Runs 6 Samples in 20 ~ 50 min (depending on sample size)

High Throughput

Runs 6 Samples in Parallel

Flexible

Uses All SPE Cartridge Sizes

Semi Automated

Vacuum Sample Loading & Valve Selection for Separating Aqueous and Organic Waste

Quality Consumables

Guaranteed Certified Cartridges

Bottle Rinse

Automated Bottle Rinse

In-Line Drying

Nitrogen and Vacuum In-line Extract Drying

Reliable

No Maintenance Required

Zero Cross-Contamination No Shared Tubing & Fittings

After 30 years of leading automation in the field of Sample Preparation, FMS introduces EZPFC to further simplify the Solid Phase Extraction process and make it easier to perform. The EZPFC's impressive performance allows laboratories to reduce turnaround time and increase quality of the water & waste water analysis while reducing the cost.

Using vacuum & nitrogen, the EZPFC automatically loads the samples, rinses the sample bottle and delivers the solvent to the SPE cartridges. The final extract is delivered directly to the extract vial ready for final concentration in the FMS SuperVap®. The process saves both labor and time.

Applications:

Drinking Water

Waste Water

Serum

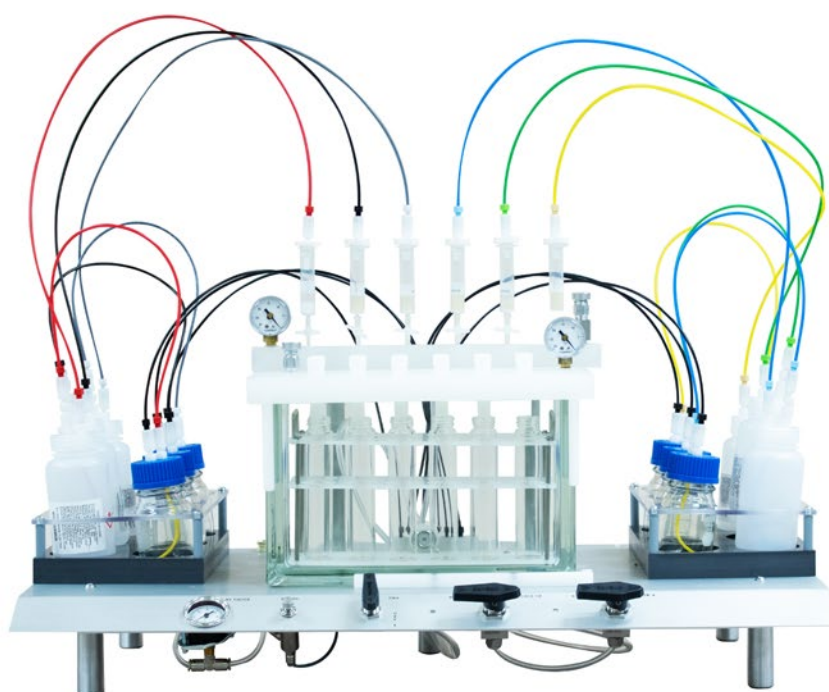


With the EZPFC you can run multi cartridge applications for any SPE PFAS/PFOS/PFOA method requiring more than one cartridge.

The EZPFC system is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The EZPFC system uses existing manual techniques. EPA Methods 537, 537.1 and other methods for PFAS/PFOS/PFOA call for the extraction and analysis in various matrices. .25 ml cartridges are available for tough samples.

EPA Method 573.1 Recoveries

Compound Name	Average %
PFBS	107
PFHxA	81
HFPO-DA	84
PFHpA	93
PFHxS	95
ADONA	88
PFOA	102
PFOS	101
PFNA	100
9CI-PF3ONS	98
PFDA	118
NMeFOSAA	97
PFUnA	95
NEtFOSAA	105
11CI-PF3OUdS	88
PFDoA	89
SUR_PFHxA	73
SUR_HFPO-DA	81
SUR_PFDA	106



EZPFC

Simple & Quick Solid Phase Extraction for Water & Waste Water Analysis

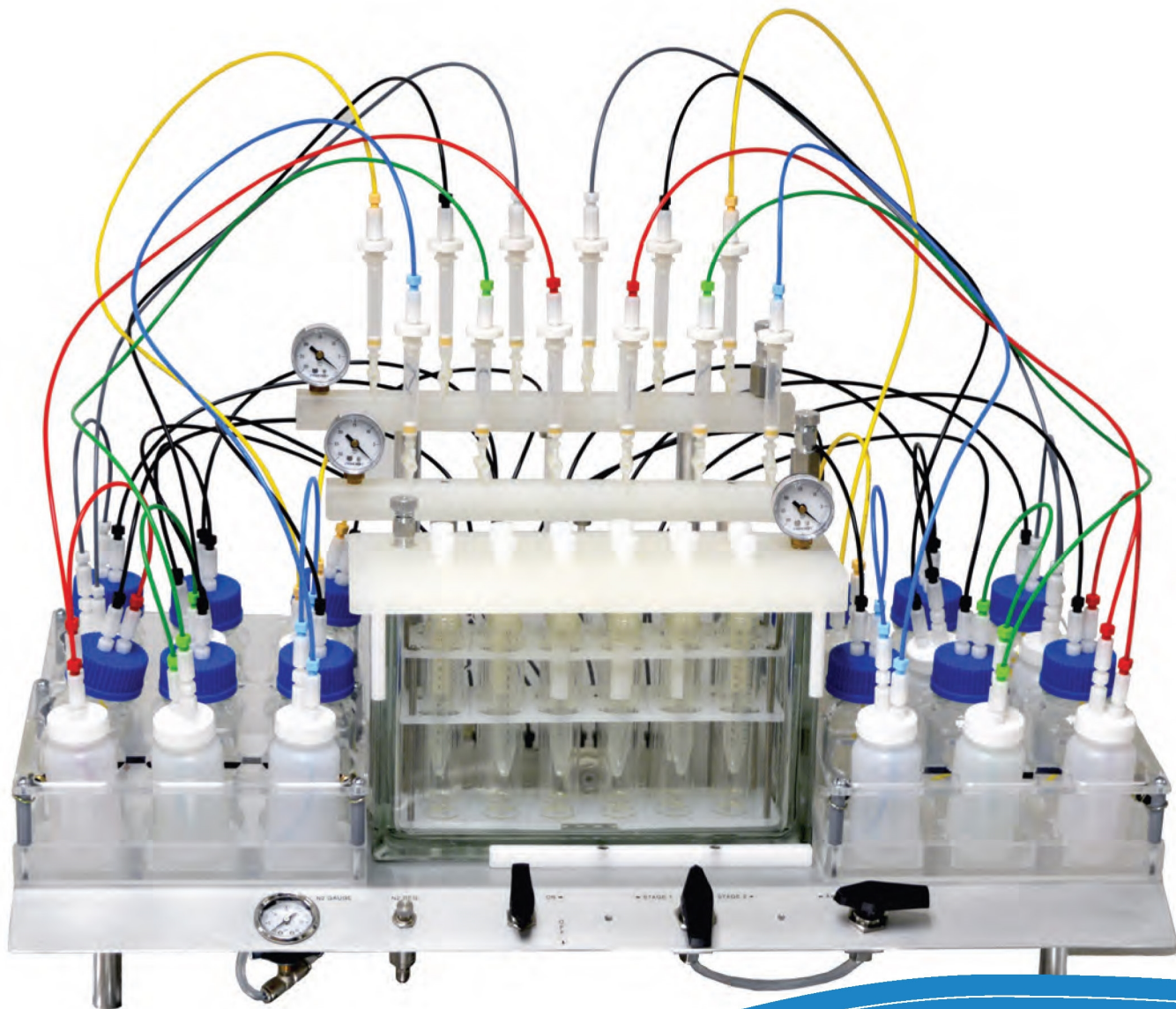
Supports EPA Methods :

EPA Method 537
EPA Method 537.1
Waste Water

"Direct-to-Vial Concentration"

The SuperVap 24 standalone 15ml tube evaporation/concentration system is the ideal solution for performing the final evaporation and concentration step. SuperVap® evaporates the extracts which then can be reconstituted and ready for LC/MS analysis.





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for Water & Waste Water
PFAS/PFOS/PFOA Analysis*

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Simple & Quick Solid Phase Extraction for Water & Waste Water PFAS/PFOS/PFOA Analysis

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Fast

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Semi Automated

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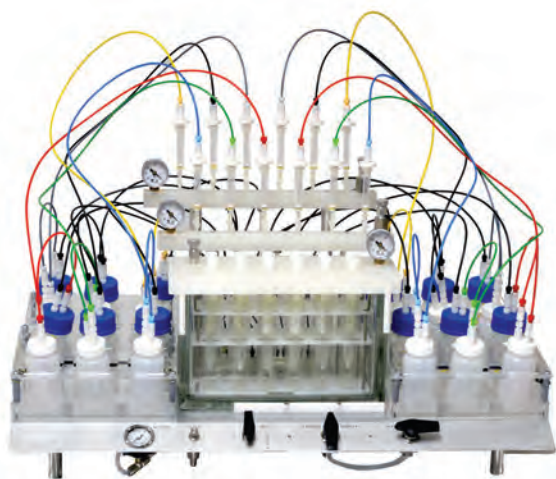
Using vacuum & nitrogen, the EZPFC automatically loads the samples, rinses the sample bottle and delivers the solvent to the SPE cartridges. The final extract is delivered directly to the extract vial ready for final concentration in the FMS SuperVap®. The process saves both labor and time.

Applications:

Drinking Water

Waste Water

Serum

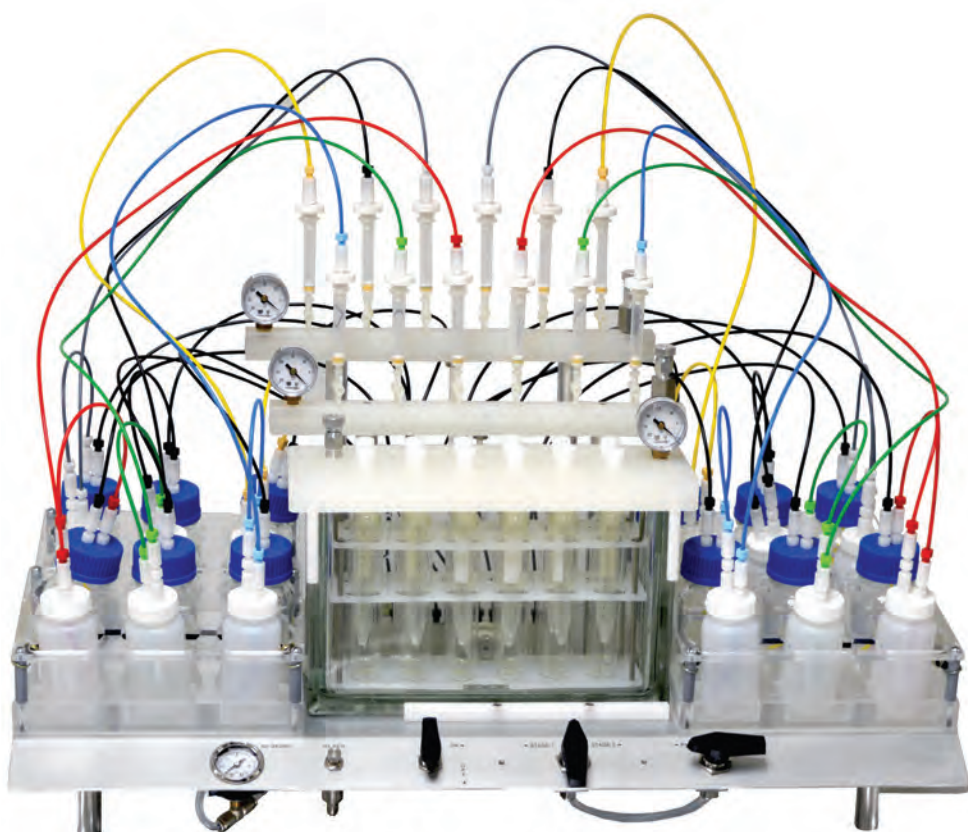


With the EZPFC you can run multi cartridge applications for any SPE PFAS/PFOS/PFOA method requiring more than one cartridge.

The EZPFC system is designed to streamline your laboratory's workflow and increase productivity by automating the manual steps in your sample preparation process. The EZPFC system uses existing manual techniques. EPA Methods 537, 537.1 and other methods for PFAS/PFOS/PFOA call for the extraction and analysis in various matrices. 25 ml cartridges are available for tough samples.

EPA Method 537.1 Recoveries

Compound Name	Average %
PFBS	107
PFHxA	81
HFPO-DA	84
PFHpA	93
PFHxS	95
ADONA	88
PFOA	102
PFOS	101
PFNA	100
9CI-PF3ONS	98
PFDA	118
NMeFOSAA	97
PFUnA	95
NEtFOSAA	105
11CI-PF3OUdS	88
PFDaA	89
SUR_PFHxA	73
SUR_HFPO-DA	81
SUR_PFDA	106



EZPFC

Simple & Quick Solid Phase Extraction for Water & Waste Water Analysis

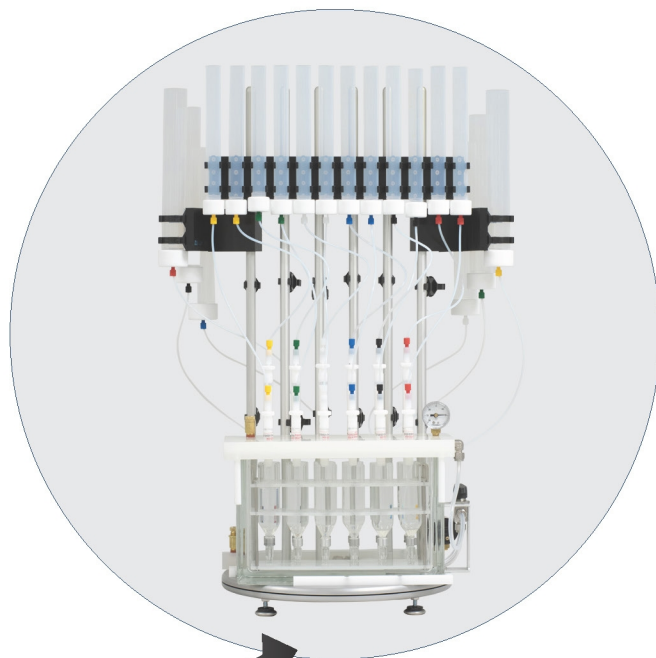
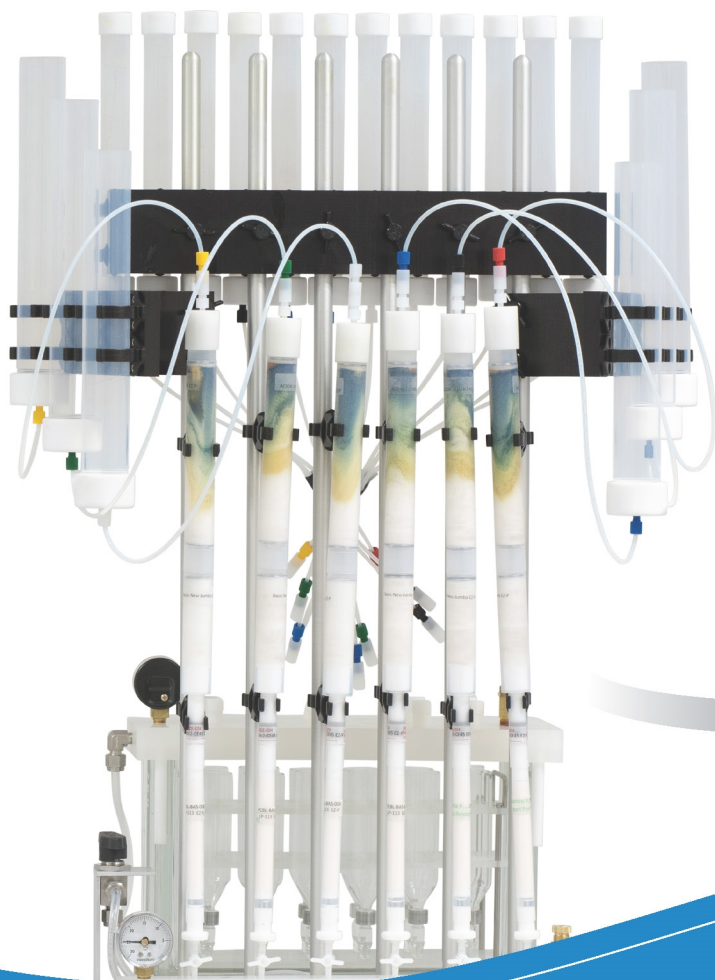
Supports EPA Methods :

EPA Method 537
EPA Method 537.1
Water Waste

"Direct-to-Vial Concentration"

The SuperVap 24 standalone 15ml tube evaporation/concentration system is the ideal solution for performing the final evaporation and concentration step. SuperVap® evaporates the extracts which then can be reconstituted and ready for LC/MS analysis.





EZprep 123TM

EZprep 123TM Simple & Quick

With EZprep 123, you can perform the entire sample preparation for Dioxins & PCBs with 3 simple steps. You can achieve high recoveries and excellent results for all analytes in less than 30 minutes.

EZprep 123™

Simple & Quick Sample Prep System
for Dioxins & PCBs Analysis

Simple to operate

Fast

Fat / Lipid Removal Capacity

Green Technology

High Throughput

Quality Consumable

Low Solvent

Reliable

No Cross-Contamination

Economical

Affordable

No Computer or Electronics

30 to 45 Minutes

Up to 7 Grams

Zero DCM

6 Samples in Parallel

Guaranteed Certified Columns

As Low as 90 ml Per Sample

No Electronic or Mechanical
Components to Fail

No Tubing or Fittings

Column Kits to Meet Your Sample Matrix

No Capital Equipment Costs

Applications

Solids:

Fish

Feed

Meat

Soil

Fly Ash

Liquids:

Milk

Oil

Serum

Water

Waste Water

Imagine performing the sample cleanup for POPS analysis in minutes. Faster than all automated dioxin sample preparation systems, achieving the highest quality results with no computerized or mechanical system to fail, no service contract to pay and no downtime to worry about.

After 30 years of leading automation in the field of Dioxin & PCBs analysis, FMS introduces EZprep 123 to further simplify the dioxin sample preparation process and make it easier to perform. The EZprep 123's impressive performance allows Dioxin labs to reduce turnaround time and increase quality of the analysis while reducing the cost.

Green Technology Zero DCM

The EZprep 123 uses Zero DCM in the cleanup process. By design it produces greater efficiency to perform clean up while greatly reducing solvent consumption.

Fat / Lipid Removal Capacity 0.15 to 7 Grams

A wide variety of economical "cleanup columns kits" are available for Dioxin/PCB sample preparation.

Fast 30 to 45 Minutes

Depending on the Sample Matrix and Lipid content, samples can be run in 30 to 45 minutes, achieving high recoveries and excellent precision.

Low Solvent As Low as 90 ml Per Sample

Column kits designed for samples with different lipid content allow for using the lowest possible amount of solvent to process a sample.

High Throughput 100's of Samples Per Day

EZprep 123 performs sample cleanup for 6 samples simultaneously achieving high recoveries and excellent precision for all analytes. The compact design of EZprep 123 allows several apparatuses to be placed in one hood performing hundreds of samples per day.

Simple and Quick 3 Easy Steps

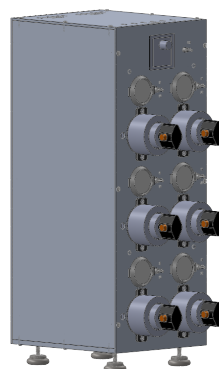
EZprep 123 uses a rotary work station to perform the entire sample cleanup quickly. One needs only to fill solvent reservoirs, install columns and start the process. From sample loading, to elution and fraction collection takes just 3 simple steps. Dioxins, PCBs and PBDEs are collected in tubes with GC vials ready for GCMS Analysis.

Reliable No Downtime

The simple design of the EZprep 123 virtually eliminates downtime. There are no electronics, valves, dispensing pump or sensitive mechanical components to fail.

Quality Consumables Certified Columns

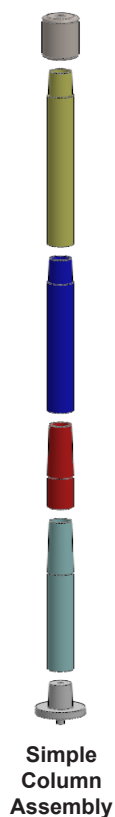
Guaranteed certified columns. A wide variety of economical, pre-packed, disposable cleanup columns are available for use with the EZprep 123 System. Column consumables are certified and guaranteed for cleanliness and performance.



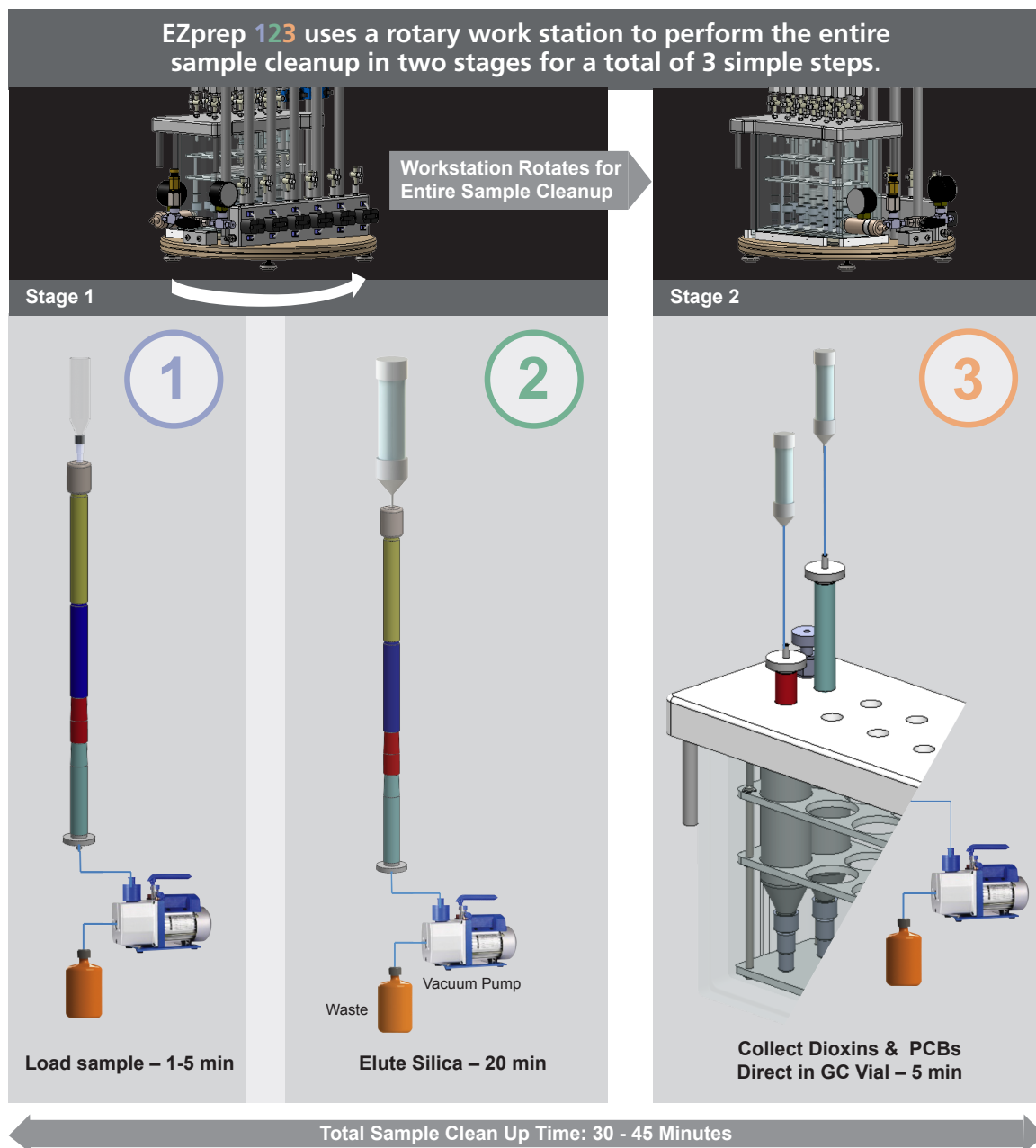
ASD Module

Automated Solvent Delivery "ASD" Module

The optional ASD module automates solvent delivery of the EZprep System by eliminating manual solvent selection and loading. ASD delivers the exact amount of solvents with a precise flow rate to chromatography columns. The solvent delivery is very simple to use and is controlled by 6 pumps, a simple timer, flow selection switch and solvent selection valve. The ASD module also includes an over pressure safety feature which will automatically disable the pump and sound an alarm if over pressure is detected.



Simple
Column
Assembly



Typical Recoveries

13C PCBs Recoveries Matrices

	Soil 5 g	Feed 10 g	Egg yolk 18 g	Olive oil 2 g	Fish oil 2 g	Hexane
PCB 28	93	104	71	103	100	95
PCB 52	90	108	69	100	97	95
PCB 77	90	103	122	98	102	108
PCB 81	92	99	60	102	98	92
PCB 101	93	110	74	106	102	98
PCB 105	108	101	61	110	104	106
PCB 114	111	102	64	105	97	104
PCB 118	86	103	60	91	89	102
PCB 123	106	97	69	92	96	93
PCB 126	107	102	89	102	98	115
PCB 138	104	96	76	92	110	111
PCB 153	101	102	68	102	114	102
PCB 156	102	99	60	113	104	105
PCB 157	93	97	60	103	99	108
PCB 167	119	106	60	105	105	107
PCB 169	98	98	81	96	96	117
PCB 170	103	107	65	103	105	117
PCB 180	98	106	84	102	102	107
PCB 189	108	97	62	95	88	107

13C PCDD/Fs Recoveries Matrices

	Soil 5 g	Feed 10 g	Egg yolk 18 g	Olive oil 2 g	Fish oil 2 g	Hexane
2378-TCDF	95	92	83	96	89	89
2378-TCDD	104	101	70	101	96	101
12378-PeCDF	86	92	85	97	78	80
23478-PeCDF	102	94	69	102	98	91
12378-PeCDD	85	93	75	60	71	100
123478-HxCDF	88	105	79	92	92	95
123678-HxCDF	103	109	80	102	94	99
234678-HxCDF	73	66	80	60	95	104
123789-HxCDF	107	92	92	95	89	95
123478-HxCDD	107	95	79	95	92	95
123789-HxCDD	82	84	87	81	86	91
1234678-HpCDF	76	82	82	83	87	87
1234789-HpCDF	91	84	93	84	81	84
1234678-HpCDD	76	80	87	82	79	74
OCDD	60	67	60	60	91	70

Low Solvent Consumption

Kit Type	Fat Removal Capacity	Solvent Consumption	Clean-up Time Minutes	Final Extract Before SuperVap	Final Extract After SuperVap
Mini Low Fat Dioxin kit	0.2 gram	90 ml	30 Min	5 ml	10 ul
High Capacity kit	3 gram	200 ml	45 Min	10 ml	10 ul



Direct-to-Vial Concentration

The SuperVap-12 standalone direct-to-vial evaporation/concentration system is the ideal solution for performing the final evaporation and concentration step. SuperVap evaporates the extracts and delivers final PCBs and Dioxins extracts in GC vials ready for GC/MS analysis