Index Filters & Extraction

Filters & Extraction

Certified Olimpeak™ Syringe Filters

OlimPeak®
Certified Filters by Teknokroma

Introduction

Filtering samples prior to injection will prolong column, frits and valves life, and reduce down time due to less instrument maintenance.

The quality of the filtrate from any sample is dependent on a number of variables, such as, the membrane, the membrane support(if used), the resin used to mold the filter housing, and last but not least, the analyst.
In any laboratory filtration where the purity of the filtrate is important, the analyst must remember three very important words, slower is better. Filtration improves when the sample passes through the filter slowly. Attention should be payed when using a high volume syringe (more than 10 ml), in order to avoid the maximum operating presure.

Integrity of the Membrane

The best method to guarantee the integrity of the membrane is the control of the bubble point.
The bubble point is the minimum pressure required to create a steady flow of bubbles from a fully wetted membrane (water for hydrophilic materials and alcohols for hydrophobics). Microporous membranes in contact with the wetting liquid, fill their pores following principles associated with the capillary forces. To vent the filled pores requires a differential pressure to be applied across them.

Principal factors affecting bubble point test are: surface tension of the liquid, surface free energy of the membrane, size of pores, temperature and wetting procedure.

In a simplified math-form, the required pressure to vent a liquid filled pore **P**, has a inverse relationship to the pore diameter, **d** as described by this bubble point equation:

$$P = \frac{K4\sigma \cos\theta}{d}$$

P: Bubble point pressure
σ: Surface tension of wetting fluid
θ: Contact angle of liquid-solid
K: Pore shape factor constant (since pores are not simple cylinders in the real filter membranes).
d: pore diameter.

Syringe Filter Membrane Compatibility Chart

Use this information to determine the ability of a specific syringe filter membrane to withstand exposure to solvent.
All concentrations are 100% unless noted.

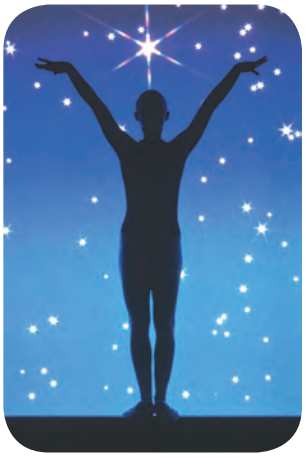
Chemical	Nylon	PTFE PTFEH	PVDF	PES	CA	RC	PP	GMF
ACIDS								
Acetic, Glacial	LC	C	C	C	IC	C	C	C
Acetic, 25%	C	C	C	C	CA	C	C	C
Hydrochloric, Concentrated	IC	C	C	C	IC	IC	C	C
Hydrochloric, 25%	IC	C	C	C	IC	IC	C	C
Sulfuric, Concentrated	IC	C	IC	IC	IC	IC	C	C
Sulfuric, 25%	IC	C	C	C	IC	IC	C	LC
Nitric, Concentrated	IC	C	C	IC	IC	IC	C	LC
Nitric, 25%	IC	C	C	C	IC	IC	C	LC
Phosphoric, 25%	IC	C	ND	ND	CA	LC	C	C
Formic, 25%	IC	C	ND	ND	LC	C	C	C
Trichloroacetic, 10%	IC	C	ND	ND	CA	C	C	ND
ALCOHOLS								
Methanol, 98%	C	C	C	C	C	C	C	C
Ethanol, 98%	C	C	C	C	C	C	C	C
Ethanol, 70%	LC	C	C	C	C	C	C	C
Isopropanol	C	C	C	C	C	C	C	C
n-Propanol	C	C	C	C	C	C	C	C
Amyl Alcohol (Butanol)	C	C	C	C	C	C	C	C
Benzyl Alcohol	C	C	C	ND	LC	C	C	IC
Ethylene Glycol	C	C	C	C	C	C	C	C
Propylene Glycol	C	C	C	C	LC	C	C	C
Glycerol	C	C	C	C	C	C	C	C
ALKALIES								
Ammonium Hydroxide, 25%	C	C	LC	C	C	LC	C	C
Sodium Hydroxide, 3N	C	C	C	C	IC	LC	C	IC
AMINES AND AMIDES								
Dimethyl Formamide	LC	C	IC	IC	IC	LC	C	C
Diethylacetamide	C	C	ND	ND	IC	C	ND	C
Triethanolamine	C	C	ND	ND	C	C	ND	ND
Aniline	ND	C	ND	ND	IC	C	ND	ND
Pyridine	C	C	IC	IC	IC	C	IC	C
Acetronile	C	C	C	LC	IC	C	C	C
ESTERS								
Ethyl Acetate/Methyl Acetate	C	C	C	IC	IC	C	LC	C
Amyl Acetate/Butyl Acetate	C	C	IC	IC	LC	C	LC	C
Propyl Acetate	C	C	IC	IC	LC	C	LC	ND
Propylene Glycol Acetate	ND	C	ND	IC	IC	C	C	ND
2-Ethoxyethyl Acetate	ND	C	ND	IC	LC	C	ND	ND
Methyl Cellusolve	ND	C	ND	IC	IC	C	C	C
Benzyl Benzoate	C	C	ND	IC	C	C	ND	ND
Isoporopyl Muristate	C	C	ND	IC	C	C	ND	ND
Tricresyl Phosphate	ND	C	ND	IC	C	C	ND	ND
HALOGENATED HYDROCARBONS								
Methylene Chloride	LC	C	C	IC	IC	C	LC	C
Chloroform	C	C	C	IC	IC	C	LC	C
Trichloroethylene	C	C	C	IC	C	C	C	C
Chlorobenzene	C	C	C	LC	C	C	C	C
Freon	C	C	C	LC	C	C	C	C
Carbon Tetrachloride	C	C	C	IC	LC	C	LC	C
HYDROCARBONS								
Hexane/Xylene	C	C	C	IC	C	C	IC	C
Toulene/Benzene	C	C	C	IC	C	C	IC	C
Keroesene/Gasoline	C	C	C	LC	C	C	IC	C
Tetralin/Decalin	ND	C	C	ND	C	C	ND	ND
KETONES								
Acetone	C	C	IC	IC	IC	C	C	C
Cyclohexanone	C	C	IC	IC	IC	C	C	C
Methyl Ethyl Ketone	C	C	LC	IC	LC	C	LC	C
Isoporpylacetone	C	C	IC	IC	C	C	ND	C
Methyl Isobutyl Ketone	ND	C	LC	IC	ND	C	LC	C
ORGANIC OXIDES								
Ethyl Ether	C	C	C	C	C	LC	LC	ND
Dioxane	C	C	LC	IC	C	C	C	C
Tetrahydrofuran	C	C	LC	IC	C	C	C	C
Triethanolamine	C	C	ND	C	C	ND	ND	ND
Dimethylsulfoxide (DSMO)	C	C	IC	IC	C	C	C	C
Isopropyl Ether	ND	C	C	C	C	C	C	ND
MISCELANEOUS								
Phenol, Aqueous Sol., 10%	ND	C	LC	IC	IC	IC	C	C
Formaldehyde, Aqueous Sol. 30%	C	C	C	C	C	LC	C	C
Hydrogen Peroxide, 30%	C	C	ND	ND	C	C	ND	ND
Silicone Oil/Mineral Oil	ND	C	C	C	C	C	C	C

Legend

C Compatible
LC Limited Compatibility (membrane may swell and shrink)
IC Incompatible (not recommended)
ND No compatibility data currently available

PTFE Polytetrafluorotehylene (Teflon®)
PTFEH Hydrophilic Polytetrafluorotehylene (Teflon®)
PVDF Polyvinylidene
PES Polyethersulfone
CA Cellulose Acetate
RC Regenerated Cellulose
PP Polypropylene
GMF Glass MicroFiber

Certified Olimpeak™ Syringe Filters



Membrane Selection

To select the right membrane for sample and solvent filtration for chromatography, there are several important considerations:

- The membrane and housing must be highly solvent resistant, since most chromatography solvents are aggresive and sometimes corrosive.
- It should not have extractables because they can interfere with analytical results.
- It should present a low protein binding for biological samples.
- Size and amount of particulates in the sample
- Special considerations if you need pre-filter
- Special membrane for filtration of inorganic ions

Guidelines to choose your syringe filter

Sample matrix with organic or/and water solvents:
You can use: Nylon, Polypropylene, PVDF, PTFE, Hydrophilic PTFE, Regenerated Cellulose

Sample matrix with aqueous solutions:
You can use:
Cellulose Acetate, M.E. Cellulose, PES, Nitrocellulose

Sample matrix with peptides and proteins:
You can use:
Regenerated Cellulose, Acetate Cellulose, Polypropilene, PVDF, PES

Tissue Culture media Filtration:
You can use:
Regenerated Cellulose,Cellulose Acetate, PES, M.E Cellulose

Ion Chromatography Filtration:
You can use:
Certified Polyethersulfone

Samples matrix with excessive amount of particulates:
You can use: Syringe filter with Glass Prefilter.

General Overview

Filter Housing: High density polypropylene (PP) medical grade:
Excellent chemical compatibility with acids, alcohols, bases, ethers, glycols, ketones and oils.
Limited resistence for acids > 1N, ethers, aromatics and halogenated hydrocarbons
Maximum operating temperature 135 ºC

Standard Connections: Female Luer Lock inlet, male Luer slip outlet as a standard in compliance with ISO 594-1

Minitip Connections: Female Luer Lock inlet, male MiniTip oulet

Robotic Connections: Female Luer Lock inlet, male Minispike outlet

Filter type: Non sterile / Sterile

Membranes Selection: PP (Polypropylene), Nylon, PTFE, Hydrophilic PTFE, M.E. Cellulose, Regenerated Cellulose, PVDF, Nitrocellulose, Cellulose Acetate, Polyethersulfone, and Glass Microfiber

Pore size: 0.2 - 0.45 µm for all filters

Pore size: 1, 2 and 5 µm for Glass microfiber

Pore size 0.45 µm: Most of HPLC application.

Pore size 0.20 µm: we use them in 2 cases:
1- In order to eliminate all bacterial contamination.
2- When we use < 5 µm HPLC column.

Max. Operating pressure: 4 mm D 650 KPa, 13 mm D. 650 KPa, 25 mm D 650 KPa and 50 mm D. 650 KPa.

Retention volumes: 4 mm < 10 µL, 13 mm < 100 µL, 25 mmD. < 150 µL and 50 mm D. <500 µL

Sample Volume Size: 4 mm D. <1 mL,13 mm D. 1-10 ml, 25 mm D > 10 ml and 50 mm D. >100 mL

Filtration area: 4 mm D. 0.07 cm2, 13 mm D. 0.95 cm2 and 25 mm D. 3.55 cm2 and 50 mm D. 16.33 cm2

For samples with a high amount of particulates it is recommended to use the filters with a glass-fiber pre-filter. This combination eliminates the need for a pre-filtration step.

(*) For critical applications using UV detection at < 210 nm is recommended to reject the first 0.1 mL filtrated (for 4mmØ), the first 0.3mL filtrated (for 13mmØ), the first 1 mL filtrated (for 25mmØ), and the first 3mL filtrated (for 50mmØ)

Certified Olimpeak™ Syringe Filters

OlimPeak®
Certified Filters by Teknokroma

Introduction of the New line of Olimpeak™ syringe filters

Teknokroma introduces into the market the new range of Certified Syringe Filters **Olimpeak™.**

This new line of Olimpeak™ Certified Filters offers a step further in traceability, method validation and GLP.

Certified Olimpeak™ syringe filters are made using polypropilene medical grade housing with Luer Lock and Luer slip fittings in compliance with ISO 594-1. Each filter is sealed using an external ring insert to maintain the membrane integrity and best performance. Olimpeak™ syringe filters are color coded for an easy identification.

All syringe filters are manufactured in compliance with ISO 9001 and technical procedures and tested according international standards of ISO 17025. Our manufacturing methods eliminate variable results through controlled manufacturing consistency batch to batch, and filter to filter.Samples and raw data of all syringe filter batches and membranes are stored during 5 years from production for reference.

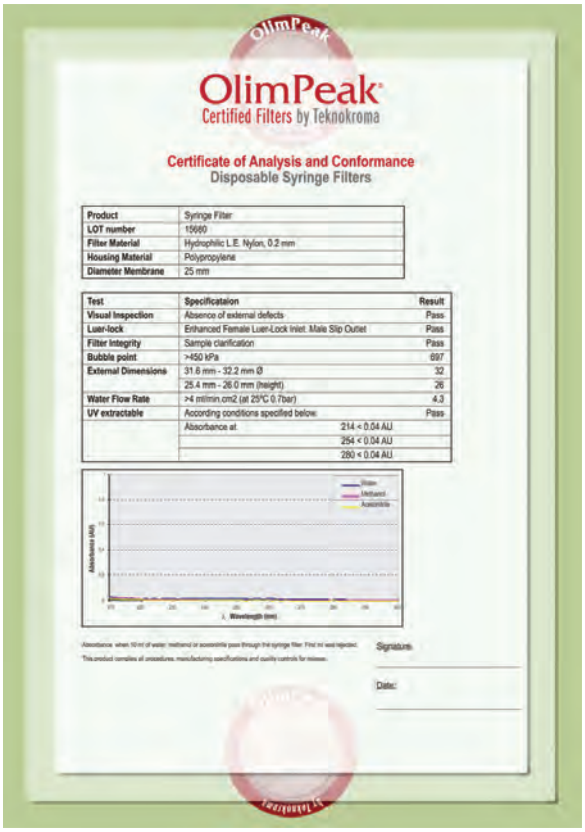
Our new **Certified Syringe Filter Olimpeak™** offer the best value. All filters are supplied with a Certificate of Quality batch to batch as guarantee of product performance and quality.

Each lot is quality monitored for:

- 100 % of the syringe filters are visually inspected following quality specifications
- Each batch of filters is tested for external dimensions
- Bubble Point
- Burst Pressure
- Filter Integrity
- Water Flow Rate
- UV Extractables and compliance with all technical procedures.
- Manufacturing specifications and quality controls for release

Test are carried out by an independent laboratory

(*) For critical applications using chromatography detection at < 210 nm it is recommended to reject the first filtrate ml.


OlimPeak
Certified Filters by Teknokroma

Certificate of Analysis and Conformance
Disposable Syringe Filters

Product	Syringe Filter
LOT number	15690
Filter Material	Hydrophilic L.E. Nylon, 0.2 mm
Housing Material	Polypropylene
Diameter Membrane	25 mm

Test	Specificataion	Result
Visual Inspection	Absence of external defects	Pass
Luer-lock	Enhanced Female Luer-Lock Inlet. Male Slip Outlet	Pass
Filter Integrity	Sample clarification	Pass
Bubble point	>450 kPa	697
External Dimensions	31.6 mm - 32.2 mm Ø	32
	25.4 mm - 26.0 mm (height)	26
Water Flow Rate	>4 ml/min.cm2 (at 25°C 0.7bar)	4.3
UV extractable	According conditions specified below:	Pass
	Absorbance at 214 < 0.04 AU	
	254 < 0.04 AU	
	280 < 0.04 AU	

Signature

Date:

Olimpeak™ Certificate

Teknokroma´s Syringes filters are of high quality and their level of extractables is very low. The encapsulating process forces the sample to pass only through the membrane .

They chemically resist a wide range of chemical products and solvents.

Teknokroma´s filters avoid any leak or any contamination due to the use of high quality materials.

Easy Identification for Method Validation

In addition to the color code, every single unit of Olimpeak™ Certified Syringe Filter is printed with the membrane type, pore size and batch number. This information makes them uniques for traceability, GLP's and validation purposes.

Certified Olimpeak™ Syringe Filters

Nylon Olimpeak™ Certified Syringe Filter with Polypropylene Housing

- Hydrophilic membrane.
- Excellent for HPLC samples, can be used for general filtration.
- Nylon is compatible with organic or aqueous solutions
- High bubble point.
- Nylon has high protein retention.
- Maximum operating temperature 100 ºC
- Nylon Low Extractables

Don´t use with strong acids, or bases, halogenated hydrocarbons, and protein.

Reference	Description	Pk
TR-200100	Nylon Filter, green 0.45 µm, 25 mm D	100
TR-200101	Nylon Filter, light green 0.20 µm, 25 mm D	100
TR-200500	Nylon Filter, green 0.45 µm, 13 mm D	100
TR-200501	Nylon Filter, light green 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

PTFE Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- The PTFE (polytetrafluoroethylene) is an hydrophobic membrane resistant to strong acids, aggresive solvents, alcohols, bases and aromatics.
- This membrane is ideal for filtration and degassing of chromatography solvents and also for extremely basic mobile phase solutions
- Very low extractables
- This membane is mechanically strong
- For sterile venting use 0.2 µm pore size, and for trasducer protection or air/gas filtration use 1 or 0.45 µm.
- Excellent thermal stability
- Aqueous solutions require pre-wetting with an alcohol
- Maximum operating temperature 100 ºC

Reference	Description	Pk
TR-200102	PTFE Filter, blue , 0.45 µm, 25 mm D	100
TR-200103	PTFE Filter, light blue, 0.20 µm, 25 mm D	100
TR-200502	PTFE Filter, blue , 0.45 µm, 13 mm D	100
TR-200503	PTFE Filter, light blue , 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Hydrophilic PTFE Certified Olimpeak™Syringe Filter with Polypropylene Housing

The PTFE (polytetrafluoroethylene) is an hydrophilic membrane resistant to strong acids, aggresive solvents, alcohols, bases and aromatics.

- This membrane is ideal for filtration and degassing of chromatography solvents and also for extremely basic mobile phase solutions
- Very low extractables
- This membane is mechanically strong
- For sterile venting use 0.2 µm pore size, and for trasducer protection or air/gas filtration use 1 or 0.45 µm.
- Excellent thermal stability
- Aqueous solutions can be directly filtrated
- Maximum operating temperature 100 ºC
- Alternative to PP membrane filters

Reference	Description	Pk
TR-200102H	PTFE H Filter, blue , 0.45 µm, 25 mm D	100
TR-200103H	PTFE H Filter, light blue, 0.20 µm, 25 mm D	100
TR-200502H	PTFE H Filter, blue , 0.45 µm, 13 mm D	100
TR-200503H	PTFE H Filter, light blue , 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Certified Olimpeak™ Syringe Filters

Polypropilene Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- Polypropylene is a hydrophilic membrane, highly resistant to solvents
- Exhibits a wide range of chemical compatibility to organic solvents
- It is ideal for biological sample filtration due to the low protein binding
- Good choice for chromatography protein analysis and biological sample filtration
- Can be used with acids and bases, and general HPLC analysis
- Maximum operating temperature 110 ºC
- Limited resistance to chloroform and MeCl

Reference	Description	Pk
TR-200111	Polypropylene Filter, white 0.45 µm, 25 mm D	100
TR-200112	Polypropylene Filter, natural , 0.20 µm, 25 mm D	100
TR-200509	Polypropylene Filter, white , 0.45 µm, 13 mm D	100
TR-200508	Polypropylene Filter, natural , 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

PVDF Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- PVDF is Polyvinylidene difluoride and is a hydrophilic membrane
- This membrane is solvent resistant and exhibits low levels of extractables
- PVDF is a low protein binding membrane, and can be used with proteins and peptides
- Can be used for sample filtration of aqueous and organic solvents
- Ideal for all the applications for HPLC and general biological filtration
- Maximum operating temperature 110 ºC

Don´t use it with strong acids, bases or ketones.

Reference	Description	Pk
TR-200106	PVDF Filter, red 0.45 µm, 25 mm D	100
TR-200107	PVDF Filter, rose 0.20 µm, 25 mm D	100
TR-200506	PVDF Filter, red 0.45 µm, 13 mm D	100
TR-200507	PVDF Filter, rose, 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Regenerated Cellulose Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- Regenerated Cellulose, is a hydrophilic solvent resistant and very low protein binding membrane
- It is also compatible with nearly all common HPLC solvents
- The Regenerated Cellulose is compatible with aqueous samples in a pH from 3 to 12
- These membranes, can used for biological samples filtration and are important for the protein recuperation
- The Regenerated Cellulose is the membrane of choice for low nonspecific binding applications, tissue culture media filtration and biological sample filtration. To improve the filtration use it with Glass pre-filte membrane
- Maximum operating temperature 110 ºC

Don´t use with strong acids, chloroform, THF.

Reference	Description	Pk
TR-200445	Regenerated Cellulose Filter, brown, 0.45 µm, 25 mm D	100
TR-200440	Regenerated Cellulose Filter, light brown, 0.20 µm, 25 mm D	100
TR-200435	Regenerated Cellulose Filter, brown 0.45 µm, 13 mm D	100
TR-200430	Regenerated Cellulose Filter, light brown, 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Certified Olimpeak™ Syringe Filters

Polyethersulfone Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- Hydrophilic membrane, very low protein and nucleotic acid binding and can be used with high temperature liquids
- This membrane provides high flow rates and good throughput volume
- PES is the filter of choice for tissue culture work, having very low extractables
- The PES is a mechanically strong membrane, and can be used with strong bases, alcohols and resistive proteins
- Good to excellent flow rates
- Maximum operating temperature 100 ºC

Don´t use it with acids, ketones, ethers, halogenated or aromatic hydrocarbons.

Reference	Description	Pk
TR-200401	Polyethersulfone, violet 0,45 µm, 25 mm D	100
TR-200402	Polyethersulfone, light violet 0,20 µm, 25 mm D	100
TR-200403	Polyethersulfone, violet 0,45 µm, 13 mm D	100
TR-200404	Polyethersulfone, light violet 0,20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Cellulose Acetate Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- Hydrophilic membrane
- Ideal for aqueous based samples and for tissue cultura media filtration and sensitive biological simples
- Very low protein binding membrane, even less than either PVDF or PES membranes
- This membrane has a lower chemical resistance than Regenerated Cellulose
- Maximum operating temperature 110 ºC

Don´t use it with organic solvents.

Reference	Description	Pk
TR-200406	Cellulose Acetate, orange 0.45 µm, 25 mm D	100
TR-200407	Cellulose Acetate, light orange 0.20 µm, 25 mm D	100
TR-200408	Cellulose Acetate, orange 0.45 µm, 13 mm D	100
TR-200409	Cellulose Acetate, light orange 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

M.E. Cellulose Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- The M.E Cellulose membrane is hydrophilic
- They are used to clean or to sterilize many aqueous solutions
- It is ideal for biological samples or culture media filtration

Reference	Description	Pk
TR-200104	M.E Cellulose Filter, yellow, 0.45 µm, 25 mm D	100
TR-200105	M.E Cellulose Filter, light yellow, 0.20 µm, 25 mm D	100
TR-200504	M.E Cellulose Filter, yellow, 0.45 µm, 13 mm D	100
TR-200505	M.E Cellulose Filter, light yellow, 0.20 µm, 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

Certified Olimpeak™ Syringe Filters

Glass Microfibre GMF Certified Olimpeak™ Syringe Filter with Polypropylene Housing

- GMF membranes are commonly used as pre-filters to remove large particulates to extend the loading capacity of the filter membrane
- Membrane of choice for dissolution test
- Maximum operating temperature 110 ºC

Reference	Description	Pk
TR-200000G	Glass Microfiber GMF, Grey, 1,0 µm 25 mm D	100
TR-200006G	Glass Microfiber GMF, Grey, 2,0 µm 25 mm D	100
TR-200007G	Glass Microfiber GMF, Grey, 5,0 µm 25 mm D	100
TR-200003G	Glass Microfiber GMF, Grey, 1,0 µm 13 mm D	100
TR-200008G	Glass Microfiber GMF, Grey, 2,0 µm 13 mm D	100
TR-200009G	Glass Microfiber GMF, Grey, 5,0 µm 13 mm D	100
*	4mm Filters available at pg 160	
**	Sterile Filters available at pg: 161	

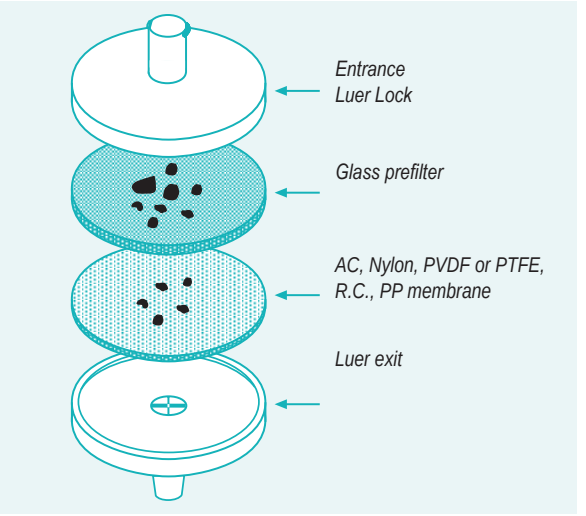
MiniTip Certified Olimpeak™ Syringe Filters

- Teknokroma has designed a new 13 mm syringe filter with a thin outlet called MiniTip, for direct filling of microvials.
- High quality MiniTip syringe filters are available with these membranes: Nylon, PES, PTFE, PVDF, RC, CN, CA, M.E.C and PP.
- Pore size can be 0.45 or 0.20 µm and the lot number of each filter is printed on the PP housing.

Reference	Description	Pk
TR-200500MT5	Mini Tip Nylon 0.45 µm x 13 mm PP, Green	500
TR-200501MT5	Mini Tip Nylon 0.2 µm x 13 mm PP, Light Green	500
TR-200502MT5	Mini Tip PTFE 0.45 µm x 13 mm PP, Blue	500
TR-200503MT5	Mini Tip PTFE 0.2 µm x 13 mm PP, Light Blue	500
TR-200502MT5H	Mini Tip PTFE H.*0.45 µm x 13 mm PP, Blue	500
TR-200503MT5H	Mini Tip PTFE H.*0.2 µm x 13 mm PP, Light Blue	500
TR-200504MT5	Mini Tip M.E.Cellulose 0.45 µm x 13 mm PP, Yellow	500
TR-200505MT5	Mini Tip M.E.Cellulose 0.2 µm x 13 mm PP, Light Yellow	500
TR-200506MT5	Mini Tip PVDF 0.45 µm x 13 mm PP, Red	500
TR-200507MT5	Mini Tip PVDF 0.2 µm x 13 mm PP, Light Red	500
TR-200508MT5	Mini Tip Polypropylene 0.2 µm x 13 mm PP, White	500
TR-200509MT5	Mini Tip Polypropylene 0.45 µm x 13 mm PP, White	500
TR-200430MT5	Mini Tip Regenerated Cellulose 0.2 µm x 13 mm PP, Light Brown	500
TR-200435MT5	Mini Tip Regenerated Cellulose 0.45 µm x 13 mm PP, Brown	500
TR-200408MT5	Mini Tip Cellulose Acetate 0.45 µm x 13 mm.D, Orange	500
TR-200409MT5	Mini Tip Cellulose Acetate 0.2 µm x 13 mm.D, Light Orange	500
TR-200403MT5	Mini Tip Polyethersulfone 0.45 µm x 13 mm.D, Violet	500
TR-200404MT5	Mini Tip Polyethersulfone 0.2 µm x 13 mm.D, Light Violet	500
TR-200500GMT5	Mini Tip GMF 1.0 µm x 13 mm, Grey	500
TR-200506GMT5	Mini Tip GMF 2.0 µm x 13 mm, Grey	500
TR-200507GMT5	Mini Tip GMF 5.0 µm x 13 mm, Grey	500
*	Hydrophilic	
**	Sterile Filters available at pg: 161	

Target Syringe Filters

Filter with Glass prefilter Certified Olimpeak™ Syringe and Polypropylene Housing



- Teknokroma offers a wide range of syringe filters with a Glass Microfiber membrane used as pre-filter.
- The Glass pre-filter is mounted before the microporous filter membrane. This combination eliminates the need for a pre-filtration step, minimizes sample loss, and prolongs the life of membrane.
- Flow rates are increased and filtrate volume is significantly greater when compared to filters with no pre-filter.
- Regenerated Cellulose membrane with the GMF membrane as a prefilter, is especially useful for tissue culture media filtration, as well as for general biological sample filtration.
- These filters are ideal for general laboratory filtration of samples that contain an excessive amount of particulates.
- The glass pre-filter removes the larger particulates and prevents premature clogging of the filter membrane.

Reference	Pore	Description	Housing	Pk
TR-200100G	0.45 µm	Nylon/Glass fibre 1 µm, 25mm	PP	100
TR-200101G	0.2 µm	Nylon/Gass fibre 1 µm, 25mm	PP	100
TR-200102G	0.45 µm	PTFE/Glass fibre 1 µm, 25mm	PP	100
TR-200103G	0.2 µm	PTFE/Glass fibre 1 µm, 25mm	PP	100
TR-200102GH	0.45 µm	PTFE H/Glass fibre 1 µm, 25mm	PP	100
TR-200103GH	0.2 µm	PTFE H/Glass fibre 1 µm, 25mm	PP	100
TR-200111G	0.45 µm	PP/Glass fibre 1 µm, 25mm	PP	100
TR-200112G	0.2 µm	PP/Glass fibre 1 µm, 25mm	PP	100
TR-200445G	0.45 µm	RC/Glass fibre 1 µm, 25mm	PP	100
TR-200440G	0.2 µm	RC/Glass fibre 1 µm, 25mm	PP	100
TR-200104G	0.45 µm	M.E.C/Glass fibre 1 µm, 25mm	PP	100
TR-200105G	0.2 µm	M.E.C/Glass fibre 1 µm, 25mm	PP	100
TR-200106G	0.45 µm	PVDF/Glass fibre 1 µm, 25mm	PP	100
TR-200107G	0.2 µm	PVDF/Glass fibre 1 µm, 25mm	PP	100
TR-200406G	0,45 µm	CA/Glass fibre 1 µm, 25mm	PP	100
TR-200407G	0,20 µm	CA/Glass fibre 1 µm, 25mm	PP	100
TR-200401G	0,45 µm	PES/Glass fibre 1 µm, 25mm	PP	100
TR-200402G	0,20 µm	PES/Glass fibre 1 µm, 25mm	PP	100
TR-200500G	0.45 µm	Nylon/Glass fibre 1 µm, 13mm	PP	100
TR-200501G	0.2 µm	Nylon/Gass fibre 1 µm, 13mm	PP	100
TR-200502G	0.45 µm	PTFE/Glass fibre 1 µm, 13mm	PP	100
TR-200503G	0.2 µm	PTFE/Glass fibre 1 µm, 13mm	PP	100
TR-200502HG	0.45 µm	PTFE H/Glass fibre 1 µm, 13mm	PP	100
TR-200503HG	0.2 µm	PTFE H/Glass fibre 1 µm, 13mm	PP	100
TR-200509G	0.45 µm	PP/Glass fibre 1 µm, 13mm	PP	100
TR-200508G	0.2 µm	PP/Glass fibre 1 µm, 13mm	PP	100
TR-200435G	0.45 µm	RC/Glass fibre 1 µm, 13mm	PP	100
TR-200430G	0.2 µm	RC/Glass fibre 1 µm, 13mm	PP	100
TR-200504G	0.45 µm	M.E.C/Glass fibre 1 µm, 13mm	PP	100
TR-200505G	0.2 µm	M.E.C/Glass fibre 1 µm, 13mm	PP	100
TR-200506G	0.45 µm	PVDF/Glass fibre 1 µm, 13mm	PP	100
TR-200507G	0.2 µm	PVDF/Glass fibre 1 µm, 13mm	PP	100
TR-200408G	0,45 µm	CA/Glass fibre 1 µm, 13mm	PP	100
TR-200409G	0,20 µm	CA/Glass fibre 1 µm, 13mm	PP	100
TR-200403G	0,45 µm	PES/Glass fibre 1 µm, 13mm	PP	100
TR-200404G	0,20 µm	PES/Glass fibre 1 µm, 13mm	PP	100

** Sterile Filters available at pg: 161

*4 mm Certified Olimpeak™ Syringe Filters

- Ideal for sample volumes < 2 ml
- Available in 10 different membranes
- Dead volume < 10 µL
- Double connection: Luer + Mini Tip
- Certified for low level extractables

Order Information

Reference	Description	Pore	Pk
TR-200610	Cellulose Esters filters, 4 mm	0.20 µm	100
TR-200615	Cellulose Esters filters, 4 mm	0.45 µm	100
TR-200620	PVDF filters, 4 mm	0.20 µm	100
TR-200625	PVDF filters, 4 mm	0.45 µm	100
TR-200630	Nylon filters, 4 mm	0.20 µm	100
TR-200635	Nylon filters, 4 mm	0.45 µm	100
TR-200640	PTFE filters, 4 mm	0.20 µm	100
TR-200645	PTFE filters, 4 mm	0.45 µm	100
TR-200640H	PTFE Hydrophilic filters, 4 mm	0.20 µm	100
TR-200645H	PTFE Hydrophilic filters, 4 mm	0.45 µm	100
TR-200650	PP filters, 4 mm	0.20 µm	100
TR-200655	PP filters, 4 mm	0.45 µm	100
TR-200660	Regenerated Cellulose, 4 mm	0.20 µm	100
TR-200665	Regenerated Cellulose, 4 mm	0.45 µm	100

Sterile Syringe Filters

Reference	Description	Pore	Pk
TR-200670	Cellulose Acetate filters, 4 mm	0.20 µm	100
TR-200675	Cellulose Acetate filters, 4 mm	0.45 µm	100
TR-200680	PES (polyethersulfone), 4 mm	0.20 µm	100
TR-200685	PES (polyethersulfone), 4 mm	0.45 µm	100
TR-200691	Glass Microfiber GMF, 4 mm	1.00 µm	100
TR-200692	Glass Microfiber GMF, 4 mm	2.00 µm	100
TR-200695	Glass Microfiber GMF, 4 mm	5.00 µm	100
**	Sterile Filters available at following secction		

** Sterile Syringe Filter

- Teknokroma offers a wide range of Sterile syringe filters
- Ideal for :
  medical aplications
  biotech aplications
  microbiological aplications
- Each filter is packed individually to guarantee a proper sterilitzation
- An indicator shows the filter its sterilizated
- Each filter is sterilizated with etilene oxide

"to order a sterile filter it's as simple as choose any configuration you want and add an "E" at the end of the P/N, like the below example:"

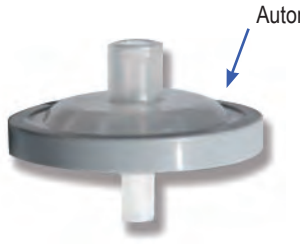
TR-200640E Sterile PTFE filters 4 mm

On-Line 50 mm Certified Olimpeak™ Filter for Gas/Liquid Aplications

Reference	Membrane	Pore	Housing	Pk
TR-200808	Cellulose Esters filters, 50 mm	0.20 µm		10
TR-200810	Cellulose Esters filters, 50 mm	0.45 µm		10
TR-200812	PVDF filters, 50 mm	0.20 µm		10
TR-200814	PVDF filters, 50 mm	0.45 µm		10
TR-200800	Nylon filters, 50 mm	0.20 µm		10
TR-200802	Nylon filters, 50 mm	0.45 µm		10
TR-200804	PTFE filters, 50 mm	0.20 µm		10
TR-200806	PTFE filters, 50 mm	0.45 µm		10
TR-200804H	PTFE Hydrophilic filters, 50 mm	0.20 µm		10
TR-200806H	PTFE Hydrophilic filters, 50 mm	0.45 µm		10
TR-200816	PP filters, 50 mm	0.20 µm		10
TR-200818	PP filters, 50 mm	0.45 µm		10
TR-200820	Regenerated Cellulose, 50 mm	0.20 µm		10
TR-200822	Regenerated Cellulose, 50 mm	0.45 µm		10
TR-800824	Cellulose Acetate filters, 50 mm	0.20 µm		10
TR-200826	Cellulose Acetate filters, 50 mm	0.45 µm		10
TR-200828	PES (polyethersulfone), 50 mm	0.20 µm		10
TR-200830	PES (polyethersulfone), 50 mm	0.45 µm		10
TR-200840	Glass fibre, 50 mm 1 µm			10
TR-200842	Glass fibre, 50 mm 2 µm			10
TR-200844	Glass fibre, 50 mm 5 µm			10
**	Sterile Filters available at previous secction			

Certified Olimpeak™ AUTOMATIC Syringe Filters

Certified AUTOMATIC OlimPeak Filter for Sotax Filter Stations

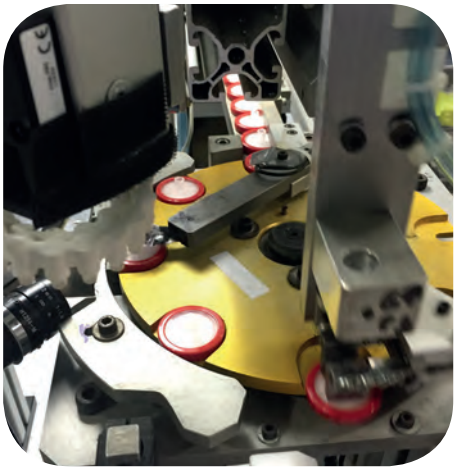


- This filter units are the newest development of Teknokroma filter for automatic equipments.
- The design of this filter is the same than the Robotic Filter except that the upper side is vault shaped.
- The inlet is a female luer Screw ant the outlet is a male luer Minispike.

Certified Olimpeak™ Filters for Automatic Equipments

Reference	Membrane	Pore	Housing	Pk
TR-200000A	Fiber Glass	1,00 µm	PP	1000
TR-200006A	Fiber Glass	2,00 µm	PP	1000
TR-200007A	Fiber Glass	5,00 µm	PP	1000
TR-200100A	Nylon	0,45 µm	PP	1000
TR-200101A	Nylon	0,20 µm	PP	1000
TR-200102A	PTFE	0,45 µm	PP	1000
TR-200103A	PTFE	0,20 µm	PP	1000
TR-200102AH	PTFE Hydrophilic	0,45 µm	PP	1000
TR-200103AH	PTFE Hydrophilic	0,20 µm	PP	1000
TR-200104A	M.E.Cellulose	0,45 µm	PP	1000
TR-200105A	M.E.Cellulose	0,20 µm	PP	1000
TR-200106A	PVDF	0,45 µm	PP	1000
TR-200107A	PVDF	0,20 µm	PP	1000
TR-200111A	Polypropylene	0,45 µm	PP	1000
TR-200112A	Polypropylene	0,20 µm	PP	1000
TR-200445A	Regenerated Cellulose	0,45 µm	PP	1000
TR-200440A	Regenerated Cellulose	0,20 µm	PP	1000
TR-200406A	Cellulose Acetate	0,45 µm	PP	1000
TR-200407A	Cellulose Acetate	0,20 µm	PP	1000
TR-200401A	Polyethersulfone	0,45 µm	PP	1000
TR-200402A	Polyethersulfone	0,20 µm	PP	1000
TR-200100GA	Nylon/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200102GA	PTFE/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200103GA	PTFE/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200102GAH	PTFE H/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200103GAH	PTFE H/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200111GA	PP/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200112GA	PP/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200445GA	RC/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200440GA	RC/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200104GA	M.E.C/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200105GA	M.E.C/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200106GA	PVDF/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200107GA	PVDF/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200406GA	CA/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200407GA	CA/Glass fibre 1 µm	0,20 µm	PP	1000
TR-200401GA	PES/Glass fibre 1 µm	0,45 µm	PP	1000
TR-200402GA	PES/Glass fibre 1 µm	0,20 µm	PP	1000

Filter Station Sotax



Olimpeak™ Membrane Filters for Mobile Phase

Membrane Filters

- Protect your instruments and columns eliminating particulates and gases from mobile phase
- Nylon and PVDF membrane filters are resistant to a wide range of organic and aqueous solvents.
- M.E. Cellulose membranes are used for filtration of aqueous mobile phase
- PTFE membrane filters are ideal for organic solvent

Membrane filters for mobile phase filtration 47 mm D.

Reference	Membrane	Pore Size µm	Diameter mm	Pk
TR-200140	Nylon	0.45	47	50
TR-200150	Nylon	0.20	47	50
TR-200200	PTFE	0.45	47	50
TR-200210	PTFE	0.20	47	50
TR-200200H	PTFE Hydrophilic	0.45	47	50
TR-200210H	PTFE Hydrophilic	0.20	47	50
TR-200260	M.E. Cellulose	0.45	47	50
TR-200270	M.E. Cellulose	0.20	47	50
TR-200320	PVDF	0.45	47	50
TR-200330	PVDF	0.20	47	50
TR-200380	Polipropylene	0.45	47	50
TR-200390	Polipropylene	0.20	47	50
TR-200420	Regenerated cellulose	0.45	47	50
TR-200425	Regenerated cellulose	0.20	47	50
TR-200457G	Glass Microfiber	1.00	47	25
TR-200457G2	Glass Microfiber	2.00	47	25
TR-200457G5	Glass Microfiber	5.00	47	25
TR-200458	Cellulose Acetate	0.45	47	50
TR-200457	Cellulose Acetate	0.20	47	50
TR-200486	PES	0.45	47	50
TR-200487	PES	0.20	47	50

Filtering Equipment

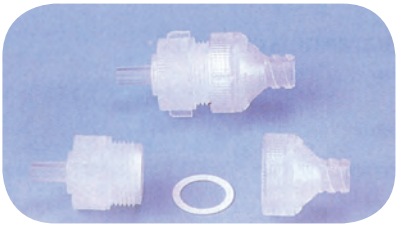
- 47 mm filtration apparatus is recommended for filtration of mobile phase and removal of particles from HPLC solvents.
- Manufactured with first quality glass, tube of DURAN galss from Schott.
- The porosity of the filtration plate is of number 3, which means a nominal pore size of 16-40 micrometers.

Reference	Description
TR-F1000	Complete Filtering Equipment 1.000 ml vessel and 250 ml funnel.
TR-F1002	Complete Filtering Equipment 2.000 ml vessel and 250 ml funnel.
TR-F1010	Filtration vessel, frosted glass and 1.000 ml capacity
TR-F1012	Filtration vessel, frosted glass and 2.000 ml capacity
TR-F1022	Fritted glass support, with screw fitting.
TR-F1016	Aluminium plier for the filtering equiment.
TR-F1018	Galss Funnel with 250 ml capacity for the filtering equipment.

Olimpeak™ Membrane Filters for Sample Filtration

Membrane filters for sample filtration (need the holder 13/25 mm D.)

Reference	Membrane	Pore Size mm	Diameter mm	Pk
TR-200109	Nylon	0.45	13	100
TR-200110	Nylon	0.20	13	100
TR-200220	M.E. Cellulose	0.45	13	100
TR-200230	M.E. Cellulose	0.20	13	100
TR-200160	PTFE	0.45	13	100
TR-200170	PTFE	0.20	13	100
TR-200160H	PTFE Hydrophilic	0.45	13	100
TR-200170H	PTFE Hydrophilic	0.20	13	100
TR-200280	PVDF	0.45	13	100
TR-200290	PVDF	0.20	13	100
TR-200340	Polipropylene	0.45	13	100
TR-200350	Polipropylene	0.20	13	100
TR-200400	Regenerated cellulose	0.45	13	100
TR-200405	Regenerated cellulose	0.20	13	100
TR-200453G	Glass microfibre	1.00	13	100
TR-200453G2	Glass microfibre	2.00	13	100
TR-200453G5	Glass microfibre	5.00	13	100
TR-200304	Cellulose Acetate	0.45	13	100
TR-200305	Cellulose Acetate	0.20	13	100
TR-200432	PES	0.45	13	100
TR-200433	PES	0.20	13	100
TR-200120	Nylon	0.45	25	50
TR-200130	Nylon	0.20	25	50
TR-200240	M.E. Cellulose	0.45	25	50
TR-200250	M.E. Cellulose	0.20	25	50
TR-200180	PTFE	0.45	25	50
TR-200190	PTFE	0.20	25	50
TR-200180H	PTFE Hydrophilic	0.45	25	50
TR-200190H	PTFE Hydrophilic	0.20	25	50
TR-200300	PVDF	0.45	25	50
TR-200310	PVDF	0.20	25	50
TR-200360	Poliyropylene	0.45	25	50
TR-200370	Polypropylene	0.20	25	50
TR-200410	Regenerated cellulose	0.45	25	50
TR-200415	Regenerated cellulose	0.20	25	50
TR-200002G	Glass microfibre	1.00	25	50
TR-200005G	Glass microfibre	2.00	25	50
TR-200008G	Glass microfibre	5.00	25	50
TR-200306	Cellulose Acetate	0.45	25	50
TR-200307	Cellulose Acetate	0.20	25	50
TR-200411	PES	0.45	25	50
TR-200412	PES	0.20	25	50



SX00 01300 - Holder 13 mm D

Holder for 13 mm. D Membrane

Reference	Description	Pk
SX00 01300	Milipore Swinex Holder 13 mm. D	10

Membrane filters 90 mm D.

Reference	Membrane	Pore Size µm	Diameter mm	Pk
TR-200140-90	Nylon	0.45	90	50
TR-200150-90	Nylon	0.20	90	50
TR-200200-90	PTFE	0.45	90	50
TR-200210-90	PTFE	0.20	90	50
TR-200200-90H	PTFE Hydrophilic	0.45	90	50
TR-200210-90H	PTFE Hydrophilic	0.20	90	50
TR-200260-90	M.E. Cellulose	0.45	90	50
TR-200270-90	M.E. Cellulose	0.20	90	50
TR-200320-90	PVDF	0.45	90	50
TR-200330-90	PVDF	0.20	90	50
TR-200380-90	Polipropylene	0.45	90	50
TR-200390-90	Polipropylene	0.20	90	50
TR-200420-90	Regenerated cellulose	0.45	90	50
TR-200425-90	Regenerated cellulose	0.20	90	50
TR-200457G-90	Glass Microfiber	1.00	90	50
TR-200457G2-90	Glass Microfiber	2.00	90	25
TR-200457G5-90	Glass Microfiber	5.00	90	25
TR-200458-90	Cellulose Acetate	0.45	90	50
TR-200457-90	Cellulose Acetate	0.20	90	50
TR-200486-90	PES	0.45	90	50
TR-200487-90	PES	0.20	90	50

Finisterre
by Teknokroma™

Technical Information of Finisterre™ SPE Cartridges

Teknokroma introduces in the market the line of Finisterre™ Solid Phase Extraction columns for a fast and efficient sample clean-up and concentration prior to analysis through GC, HPLC, and/or other instrumental methods.
SPE method concentrates and purifies analytes from solution by sorption onto a disposable solid phase cartridge, followed by elution of the analyte with an appropriate solvent for instrumental analysis.
The Finisterre™ SPE columns improve sample purity, quantification, and HPLC column life.

Our unic packing process **Filling PRIM™** guarantees unsurpassed accuracy by strictly monitoring the amount of packing in each individual column.
The dosification control by weight, column by column, using an automated specially designed machine, permits to assure results with high accuracy and less variability.

The irregular silica shape with an average particle size of 50 µm and no fines, avoid silica contamination in your final product. The pore diameter used in the Finisterre™ packing is 60Å .
The very tight particle size distribution used to manufacture SPE Finisterre™ packing provides a very good separation, as the sample and solvent flow uniformly through the sorbent bed, incrementing the contact with the packing.

Finisterre™ SPE columns consist of molded high purity polypropylene bodies with two 20 µm polyethylene frits that contain the packing material.
Finisterre™ SPE columns are equipped with male Luer-tips and designed for elution using either a syringe, a filter flask or a vacuum manifold.

Finisterre™ SPE products are manufactured in compliance with ISO 9001 and technical procedures and tested according international standards ISO 17025.

Teknokroma Finisterre™ SPE cartridges are available in four sizes (1, 3, 6 and 12 mL) and different packing materials (C18, C8, C4, C2, PH, SI, CN, NH_2, DIOL, Florisil™, SAX, SCX).
Sorbent weights ranged from 100 mg to 1 g.

Samples and raw data of all Finisterre™ SPE cartridges batches are stored during 5 years from production for reference.

Product Presentation

Finisterre™ SPE Columns

Finisterre™ C18 SPE Columns

Is the traditional matrix for reversed-phase chromatography. The high loading provides the highest degree of hydrophobicity

Retention Mechanism: Reverse phase, one of the most hydrophobic phases
Functional Group: Polymerically bonded octadecyl C18 endcapped. High Capacity C18
Endcapped: yes
Carbon Load: 17.0 %
Sílica Base: Irregular Shape
Average Particle Size: 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene
Frit: Polyethylene 20 µm porosity

Applications

Isolation of hydrophobic species from solution
Compounds retained are Non- polar to moderately polar in a polar matrix.

- Drugs in serum, plasma and urine
- Desalting of peptides
- Organic acids in wine
- Pesticides in water by trace enrichment.

Finisterre™ C18 High Capacity C18 are Equivalent to:

Baker C18, Macherey –Nagel C18–ec, Macherey –Nagel C18–ecf, Phenomenex C 18-E,Supelco DSC-18, Supelco ENVI-18, Varian C 18, Waters C18, Whatman ODS-5

Cat.No	Description	pk
TR-F034000	Finisterre SPE Columns C18/17% 100mg/1ml	100
TR-F034002	Finisterre SPE Columns C18/17% 200mg/3ml	50
TR-F034004	Finisterre SPE Columns C18/17% 500mg/3ml	50
TR-F034006	Finisterre SPE Columns C18/17% 500mg/6ml	30
TR-F034008	Finisterre SPE Columns C18/17% 1000mg/6ml	30
TR-F034010	Finisterre SPE Columns C18/17% 1000mg/12ml	20
TR-F034012	Finisterre SPE Columns C18/17% 2000mg/12ml	20

Finisterre™ C8 SPE Columns

Retention Mechanism: Reverse phase.
Functional Group: Octyl (C8)
Endcapped: yes
Carbon Load: 8.5 %
Sílica Base: Irregular Shape
Average Particle Size 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene
Frit: Polyethylene 20 µm porosity

Applications

For compounds retained too strongly on C18

Cat.No	Description	pk
TR-F034020	Finisterre SPE Columns C8 100mg/1ml	100
TR-F034022	Finisterre SPE Columns C8 200mg/3ml	50
TR-F034024	Finisterre SPE Columns C8 500mg/3ml	50
TR-F034026	Finisterre SPE Columns C8 500mg/6ml	30
TR-F034028	Finisterre SPE Columns C8 1000mg/6ml	30
TR-F034030	Finisterre SPE Columns C8 1000mg/12ml	20
TR-F034032	Finisterre SPE Columns C8 2000mg/12ml	20

Finisterre™ C2 SPE Columns

Retention Mechanism: Reverse phase.
Functional Group: Ethyl (C2)
Endcapped: yes
Carbon Load: 5.5 %
Sílica Base: Irregular Shape
Average Particle Size 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene
Frit: Polyethylene 20 µm porosity

Applications

Antiepileptics from plasma

Cat.No	Description	pk
TR-F034060	Finisterre SPE Columns C2 100mg/1ml	100
TR-F034062	Finisterre SPE Columns C2 200mg/3ml	50
TR-F034064	Finisterre SPE Columns C2 500mg/3ml	50
TR-F034066	Finisterre SPE Columns C2 500mg/6ml	30
TR-F034068	Finisterre SPE Columns C2 1000mg/6ml	30
TR-F034070	Finisterre SPE Columns C2 1000mg/12ml	20
TR-F034072	Finisterre SPE Columns C2 2000mg/12ml	20

Finisterre™ PH SPE Columns

Retention Mechanism: Reverse phase.
Functional Group: Phenyl (PH)
Endcapped: yes
Carbon Load: 3.8 %
Sílica Base: Irregular Shape
Average Particle Size 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene

Finisterre™ SPE Columns

Applications
Choose for highly aromatic compounds.

Cat.No	Description		pk
TR-F034080	Finisterre SPE Columns PH	100mg/1ml	100
TR-F034082	Finisterre SPE Columns PH	200mg/3ml	50
TR-F034084	Finisterre SPE Columns PH	500mg/3ml	50
TR-F034086	Finisterre SPE Columns PH	500mg/6ml	30
TR-F034088	Finisterre SPE Columns PH	1000mg/6ml	30
TR-F034090	Finisterre SPE Columns PH	1000mg/12ml	20
TR-F034092	Finisterre SPE Columns PH	2000mg/12ml	20

Finisterre™ CN SPE Columns

Retention Mechanism: Normal phase -weak/moderate non-polar with aqueous matrix, or polar with non polar organic matrix
Functional Group: Cyanopropyl (CN)
Endcapped: yes
Carbon Load: 4.0 %
Sílica Base: Irregular Shape
Average Particle Size 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene
Frit: Polypropylene 20 µm porosity

Applications
Compounds retained are polar compounds in a non-polar matrix
- Analytes in aqueous or organic solvents
- Drugs and metabolites in physiological fluids.

Cat.No	Description		pk
TR-F034100	Finisterre CN SPE Columns	100mg/1ml	100
TR-F034102	Finisterre CN SPE Columns	200mg/3ml	50
TR-F034104	Finisterre CN SPE Columns	500mg/3ml	50
TR-F034106	Finisterre CN SPE Columns	500mg/6ml	30
TR-F034108	Finisterre CN SPE Columns	1000mg/6ml	30
TR-F034110	Finisterre CN SPE Columns	1000mg/12ml	20
TR-F034112	Finisterre CN SPE Columns	2000mg/12ml	20

Finisterre™ NH_2 SPE Columns

Retention Mechanism: Weak anion exchange with aqueous matrix, normal phase with non-polar organic matrix.
Functional Group: Aminopropyl (NH_2)
Endcapped: no
Carbon Load: 5.0 %
Sílica Base: Irregular Shape
Average Particle Size 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene
Frit: Polypropylene 20 µm porosity

Applications
Compounds retained are polar compounds in a non-polar matrix

Cat.No	Description		pk
TR-F034140	Finisterre SPE Columns NH2	100mg/1ml	100
TR-F034142	Finisterre SPE Columns NH2	200mg/3ml	50
TR-F034144	Finisterre SPE Columns NH2	500mg/3ml	50
TR-F034146	Finisterre SPE Columns NH2	500mg/6ml	30
TR-F034148	Finisterre SPE Columns NH2	1000mg/6ml	30
TR-F034150	Finisterre SPE Columns NH2	1000mg/12ml	20
TR-F034152	Finisterre SPE Columns NH2	2000mg/12ml	20

Finisterre™ DIOL SPE Columns

Retention Mechanism: Normal phase
Functional Group: DIOL (2OH)
Endcapped: no
Carbon Load: 6.0 %
Sílica Base: Irregular Shape
Average Particle Size 50 µm
Pore Diameter: 60 Å

Applications
Compounds retained are polar compounds in a non-polar matrix
- Analytes in aqueous or organic solvents
- Drugs and metabolites in physiological fluids

Cat.No	Description		pk
TR-F034180	Finisterre Diol SPE Columns	100mg/1ml	100
TR-F034182	Finisterre Diol SPE Columns	200mg/3ml	50
TR-F034184	Finisterre Diol SPE Columns	500mg/3ml	50
TR-F034186	Finisterre Diol SPE Columns	500mg/6ml	30
TR-F034188	Finisterre Diol SPE Columns	1000mg/6ml	30
TR-F034190	Finisterre Diol SPE Columns	1000mg/12ml	20
TR-F034192	Finisterre Diol SPE Columns	2000mg/12ml	20

Finisterre™ SPE Columns

Finisterre™ Florisil SPE Columns

Retention Mechanism: Normal phase
Functional Group: Florisil ® (FLO)
Base: Magnesium Silicate
Average Particle Size 75-100 µm
Pore Diameter: 85 Å
Hardware: Polypropylene
Frit: Polypropylene 20 µm porosity

Applications

Compounds retained are polar compounds in a non-polar matrix
Isolation of low to moderate polarity species from non-aqueous solution

- Pesticides in food and feeds
- Polychlorinated biphenyls in transformer oil
- Clean up of pesticides from soil extraction and food residue

Cat.No	Description		pk
TR-F034160	Finisterre Frorisil SPE Column	100mg/1ml	100
TR-F034162	Finisterre Frorisil SPE Column	200mg/3ml	50
TR-F034164	Finisterre Frorisil SPE Column	500mg/3ml	50
TR-F034166	Finisterre Frorisil SPE Column	500mg/6ml	30
TR-F034168	Finisterre Frorisil SPE Column	1000mg/6ml	30
TR-F034170	Finisterre Frorisil SPE Column	1000mWg/12ml	20
TR-F034172	Finisterre Frorisil SPE Column	2000mWg/12ml	20

Finisterre™ Florisil/P SPE Columns

Retention Mechanism: Normal phase
Functional Group: Florisil ® (FLO)
Base: Magnesium Silicate
Average Particle Size 100-200 µm
Pore Diameter: 85 Å
Hardware: Polypropylene
Frit: Polypropylene 20 µm porosity

Applications

Compounds retained are polar compounds in a non-polar matrix
Isolation of low to moderate polarity species from non-aqueous solution

- Pesticides in food and feeds
- Polychlorinated biphenyls in transformer oil
- Clean up of pesticides from soil extraction and food residue

Cat.No	Description		pk
TR-F034161	Finisterre Frorisil/P SPE Column	100mg/1ml	100
TR-F034163	Finisterre Frorisil/P SPE Column	200mg/3ml	50
TR-F034165	Finisterre Frorisil/P SPE Column	500mg/3ml	50
TR-F034167	Finisterre Frorisil/P SPE Column	500mg/6ml	30
TR-F034169	Finisterre Frorisil/P SPE Column	1000mg/6ml	30
TR-F034171	Finisterre Frorisil/P SPE Column	1000mWg/12ml	20
TR-F034173	Finisterre Frorisil/P SPE Column	2000mWg/12ml	20

Finisterre™ Si SPE Columns

Retention Mechanism: Normal phase, polar neutral phase
Functional Group: Silica (Si)
Base: Silica
Average Particle Size 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene
Frit: Polypropylene 20 µm porosity

Applications

Isolation of low to moderate polarity species from non-aqueous solution.
Compounds retained are Polar compounds in a non-polar matrix

- Lipid classification
- Separation of plant pigments
- Removal of fat soluble vitamins
- Clean up of pesticides from soil extraction and food residue

Cat.No	Description		pk
TR-F034120	Finisterre SPE Columns Silica	100mg/1ml	100
TR-F034122	Finisterre SPE Columns Silica	200mg/3ml	50
TR-F034124	Finisterre SPE Columns Silica	500mg/3ml	50
TR-F034126	Finisterre SPE Columns Silica	500mg/6ml	30
TR-F034128	Finisterre SPE Columns Silica	1000mg/6ml	30
TR-F034130	Finisterre SPE Columns Silica	1000mg/12ml	20
TR-F034132	Finisterre SPE Columns Silica	2000mg/12ml	20

Finisterre™ SAX SPE Columns

Retention Mechanism: Anion exchange
Functional Group: Tetramethyl ammonium
Base: Silica
Counter Ion: Acetate
Average Particle Size 50 µm
Hardware: Polypropylene
Frit: Polypropylene 20 µm porosity

Finisterre™ SPE Columns

Applications

Retains (-) charged compounds

Cat.No	Description		pk
TR-F034200	Finisterre SAX SPE Columns	100mg/1ml	100
TR-F034202	Finisterre SAX SPE Columns	200mg/3ml	50
TR-F034204	Finisterre SAX SPE Columns	500mg/3ml	50
TR-F034206	Finisterre SAX SPE Columns	500mg/6ml	30
TR-F034208	Finisterre SAX SPE Columns	1000mg/6ml	30
TR-F034210	Finisterre SAX SPE Columns	1000mg/12ml	20
TR-F034212	Finisterre SAX SPE Columns	2000mg/12ml	20

Finisterre™ SCX SPE Columns

Retention Mechanism: Cation exchange
Functional Group: Benzene sulfonic acid
Base: Silica
Counter Ion: Hydrogen
Exchange Capacity: 0.24 meq/100 mg
Average Particle Size 50 µm
Hardware: Polypropylene
Frit: Polypropylene 20 µm porosity

Applications

Retains (+) charged compounds

Cat.No	Description		pk
TR-F034220	Finisterre SCX SPE Columns	100mg/1ml	100
TR-F034222	Finisterre SCX SPE Columns	200mg/3ml	50
TR-F034224	Finisterre SCX SPE Columns	500mg/3ml	50
TR-F034226	Finisterre SCX SPE Columns	500mg/6ml	30
TR-F034228	Finisterre SCX SPE Columns	1000mg/6ml	30
TR-F034230	Finisterre SCX SPE Columns	1000mg/12ml	20
TR-F034232	Finisterre SCX SPE Columns	2000mg/12ml	20

Note: Customs configurations about Finisterre SPE columns are aviable, contact with us for further information

Finisterre™ SPE columns are simple to use and alow four-steps sample preparation

1. **Conditioning**
2. **Sample Application**
3. **Washing**
4. **Elution**

The capacity of SPE columns are defined as the amount of analyte that a packing bed will retain from a sample matrix.
There are some variables that affect capacity, basicaly: sample matrix, analyte, structure and other compound than compete with the analyte. But in general, with 60 Å bonded silica phases will retain approximately 1 % of their bed weigth.

For example, a 200 mg bed will retain approximately 2 mg of all compounds in a sample that have an affinity for the sorbent.
But the best system to determine the capacity for an SPE column is experimentally.

1. Conditioning

The conditioning wets the packing surface, making the packing functional group fully accesible to the sample. In general for 100 mg of packing you can pass 2 ml of two solvent, generaly metanol followed of water in reverse phase. In normal phase are usually conditioned with the solvent that is weaker than the sample matrix.

It is important that the tube should not be dried before adding the sample.

2. Sample application

A general rule use a sample volume equal to half the tube volume, for example 1 ml for 200 mg tubes.
The flow rate of elution of sample about 1 ml/min. for 100 mg tubes, 2 ml /min. for 200 mg tubes, and 3 ml/min. for 500 mg tubes.

3. Washing

Select a wash solvent that has the same, or slightly greater, elution strength as the sample matrix.

Wash solvents should remove weakly retained interferences without being strong enough to elute the analyte.

4. Elution

Select a solvent with more elution strength than the sample matrix.

As standard use 250 µl of solvent for 100 mg of packing, in general the solvents use for elution should be strong enough to completely elute an analyte in a small volume 1 or 2 ml.
Attention should be paid to solvent strength relative to the packing material.

Finisterre OA™ Polymeric SPE Columns

Finisterre OA™ HLB

Description:

Finisterre OA™ HLB is a wettable copolymer presenting a Hydrophobic-Lipophilic Balance (HLB) permitting a strong retention for neutral, acidic and basic compounds and a high stability in organic silvents.

Particle Size: 40 µm
Pore Diameter: 110 Å
Surface Area: 850 m²/g
pH Stability: 0 to 14

Applications

- Drugs & metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Environmental analysis: trace of PAHs, pesticides, herbicides, phenols & PCB in water
- Antibiotics and pesticides in food & beverage

Cat.No	Description	pk
TR-FB034300	Finisterre OA™ HLB SPE Columns 30mg/1ml	100
TR-FB034302	Finisterre OA™ HLB SPE Columns 60mg/3ml	50
TR-FB034304	Finisterre OA™ HLB SPE Columns 100mg/6ml	30
TR-FB034306	Finisterre OA™ HLB SPE Columns 200mg/6ml	30
TR-FB034308	Finisterre OA™ HLB SPE Columns 500mg/6ml	30

Finisterre OA™ SCX

Description:

Finisterre OA™ SCX is a polystyrene-divinylbenzene copolymer functionalized by a strong cation exchanger presenting a high selectivity for acids (pK_a 2 - 10). It is highly stable in organic solvents.

Particle Size: 85 µm
Pore Diameter: 60 Å
Surface Area: 800 m²/g
pH Stability: 0 to 14
Ionic Capacity: 0,85 meq/g

Applications

- Basic Drugs & metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Pesticides, herbicides, fongicides & melamine from food & beverage

Cat.No	Description	pk
TR-FB034320	Finisterre OA™ SCX SPE Columns 30mg/1ml	100
TR-FB034322	Finisterre OA™ SCX SPE Columns 60mg/3ml	50
TR-FB034324	Finisterre OA™ SCX SPE Columns 100mg/6ml	30
TR-FB034326	Finisterre OA™ SCX SPE Columns 200mg/6ml	30
TR-FB034328	Finisterre OA™ SCX SPE Columns 500mg/6ml	30

Finisterre OA™ DVB

Description:

Finisterre OA™ DVB is a polystyrene-divinylbenzene copolymer presenting a high hydrophobicity used as reversed-phase for extraction of neutral, acidic and basic compounds in viscous matrices.

Particle Size: 85 µm
Pore Diameter: 60 Å
Surface Area: 1000 m²/g
pH Stability: 0 to 14

Applications

- Drugs & metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Environmental analysis: trace of PAHs, pesticides, herbicides, phenols & PCB in water

Cat.No	Description	pk
TR-FB034310	Finisterre OA™ DVB SPE Columns 30mg/1ml	100
TR-FB034312	Finisterre OA™ DVB SPE Columns 60mg/3ml	50
TR-FB034314	Finisterre OA™ DVB SPE Columns 100mg/6ml	30
TR-FB034317	Finisterre OA™ DVB SPE Columns 200mg/6ml	30
TR-FB034318	Finisterre OA™ DVB SPE Columns 500mg/6ml	30

Finisterre OA™ SAX

Description:

Finisterre OA™ SAX is a polystyrene-divinylbenzene copolomer functionalized by a strong anion exchanger presenting a high selectivity (pK_a 2 - 8). It is highly stable in organic solvents.

Particle Size: 85 µm
Pore Diameter: 60 Å
Surface Area: 900 m²/g
pH Stability: 1 to 14
Ionic Capacity: 0,25 meq/g

Applications

- Acidic compounds & metabolites from biological fluids & tissues
- Food additives & contaminants
- Acidic phenols
- Acidic herbicides

Cat.No	Description	pk
TR-FB034330	Finisterre OA™ SAX SPE Columns 30mg/1ml	100
TR-FB034332	Finisterre OA™ SAX SPE Columns 60mg/3ml	50
TR-FB034334	Finisterre OA™ SAX SPE Columns 100mg/6ml	30
TR-FB034336	Finisterre OA™ SAX SPE Columns 200mg/6ml	30
TR-FB034338	Finisterre OA™ SAX SPE Columns 500mg/6ml	30

Finisterre OA™ Polymeric SPE Columns

Finisterre OA™ WCX

Description:

Finisterre OA™ WCX is a polystyrene-divinylbenzene copolymer functionalized by a weak cation exchanger used to catch and release strong basic compounds (pK_a >10). It is highly stable in organic solvents.

Particle Size: 85 µm
Pore Diameter: 60 Å
Surface Area: 800 m²/g
pH Stability: 0 to 14
Ionic Capacity: 0,70 meq/g

Applications

- Strong basic compounds from biological fluids & tissues
- Streptomycin from food

Cat.No	Description	pk
TR-FB034340	Finisterre OA™ WCX SPE Columns 30mg/1ml	100
TR-FB034342	Finisterre OA™ WCX SPE Columns 60mg/3ml	50
TR-FB034344	Finisterre OA™ WCX SPE Columns 100mg/6ml	30
TR-FB034346	Finisterre OA™ WCX SPE Columns 200mg/6ml	30
TR-FB034348	Finisterre OA™ WCX SPE Columns 500mg/6ml	30

Finisterre OA™ HLB

Description:

Finisterre OA™ WAX is a polystyrene-divinylbenzene copolymer functionalized by a weak anion exchanger used to catch and release strong acidic compounds (pKa <2). It is highly stable in organic solvents.

Particle Size: 85 µm
Pore Diameter: 60 Å
Surface Area: 800 m²/g
pH Stability: 1 to 14
Ionic Capacity: 0,50 meq/g

Applications

- Drugs & metabolites in biological fluids
- API from tablets, creams, in waste water & drinking water
- Environmental analysis: trace of PAHs, pesticides, herbicides, phenols & PCB in water
- Antibiotics and pesticides in food & beverage

Cat.No	Description	pk
TR-FB034350	Finisterre OA™ WAX SPE Columns 30mg/1ml	100
TR-FB034352	Finisterre OA™ WAX SPE Columns 60mg/3ml	50
TR-FB034354	Finisterre OA™ WAX SPE Columns 100mg/6ml	30
TR-FB034356	Finisterre OA™ WAX SPE Columns 200mg/6ml	30
TR-FB034358	Finisterre OA™ WAX SPE Columns 500mg/6ml	30

Equivalences

Teknokorma	Waters	Phenomenex	Agilent	Biotage
Finisterre OA™ HLB	Waters Oasis® HLB	Phenomenex Strata™-X	Agilent Bond Elut Plexa / Agilent Nexus	Biotage Evolute® ABN
Finisterre OA™ DVB	Waters Oasis® HLB	Phenomenex Strata™-X	Agilent Bond Elut PPL / Agilent SimpliQ DVB	Biotage Evolute® ABN
Finisterre OA™ SCX	Waters Oasis® MCX	Phenomenex Strata™-X-C	Agilent Bond Elut Plexa PCX / Agilent SimpliQ SCX	Biotage Evolute® CX
Finisterre OA™ SAX	Waters Oasis® MAX		Agilent SimpliQ SAX	Biotage Evolute® AX
Finisterre OA™ WCX	Waters Oasis® WCX	Phenomenex Strata™-X-CW	Agilent SimpliQ WCX	Biotage Evolute® WCX
Finisterre OA™ WAX	Waters Oasis® WAX	Phenomenex Strata™-X-AW	Agilent SimpliQ WAX	Biotage Evolute® WAX

Finisterre™ C18 SPE 96 well plate

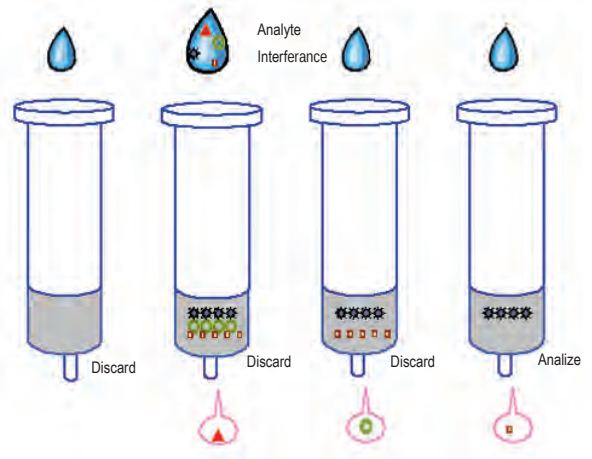
Retention Mechanism: Reverse phase, one of the most hydrophobic phases
Functional Group: Polymerically bonded octadecyl C18 endcapped. High Capacity C18

Endcapped: yes
Higher Carbon Load: 17.0 %
Sílica Base: Irregular Shape
Average Particle Size: 50 µm
Pore Diameter: 60 Å
Hardware: Polypropylene
Frit: Polyethylene 20 µm porosity

96 well plate format

Cat.No	Description	pk
TR-F034500	Finisterre SPE 96 w/plate C18/17% 10mg/2ml	1
TR-F034502	Finisterre SPE 96 w/plate C18/17% 20mg/2ml	1
TR-F034504	Finisterre SPE 96 w/plate C18/17% 30mg/2ml	1
TR-F034506	Finisterre SPE 96 w/plate C18/17% 60mg/2ml	1
TR-F034508	Finisterre SPE 96 w/plate C18/17% 1000mg/2ml	1

Finisterre™ Use & Extraction Procedures



Select the different Extraction Procedures Methods:

Extraction Prodecures for Reversed Phases

Packings of Reverse Phase are composed of a silica backbone bonded with hydrocarbon chains.
Packings of Reverse Phase are used to isolate relatively non-polar compounds from a polar matrix.
Reverse Phase packings require conditioning with an organic solvent followed by an aqueous solvent prior to use.
Elution of no non polar compounds require less polar solvents, and moderataly polar compounds is accomplished with middle polarity solvents.

1. Conditioning:
Rinse packing bed with 3-5 ml of methanol followed by 3-5 ml of water or buffer (don't let packing bed dry before adding sample).

2. Sample application:
Apply sample solution to the top of the packing bed. Push or draw the sample through the bed at a flow rate of 1-5 ml/min. Collect sample for analysis if desired compound has passed through the packing bed without being retained.

3. Wash:
If the desired compound was retained, wash off any weakly retained interfering compound(s) with a polar solvent.

4. Elution:
Elute desired compound with 1-2 ml of a non-polar solvent and collect for analysis.

Extraction Prodecures for Normal Phases

Normal-phase packings are composed of a silica backbone bonded with carbon chains containing polar functional groups.
Packings of Normal Phase are used to isolate polar compounds from a non-polar matrix.
Normal Phase packings require conditioning with non polar solvents
Elution is accomplished with more polar solvents.

1. Conditioning:
Rinse packing bed with 3-5 ml of non-polar solvent (don't let packing bed dry before adding sample).

2. Sample application:
Apply sample solution to the top of the packing bed. Push or draw the sample through the bed at a flow rate of 1-5 ml/min. Collect sample for analysis if desired compound has passed through the packing bed without being retained.

3. Wash:
If the desired compound was retained, wash off any weakly retained interfering compound(s) with a non-polar solvent.

4. Elution:
Elute desired compound with 1-2 ml of a polar solvent and collect for analysis.

Extraction Prodecures for Ion-Exchange

Packings of Ion Exchange are composed of different materials backbone bonded with carbon chains terminated by a negatively or positively charged functional groups.
Packings of Ion Exchange are used to isolate charged or potentially charged compounds.
Anions and cations are retained on the corresponding resin by exchanging the anion or cation in the sample with the anion or cation on the resin.

1. Conditioning:
Rinse packing bed with 3-5 ml of de-ionized water or low ionic strength buffer (e.g. 0.0001M-0.01M).

2. Sample application:
Apply sample to the top of the packing bed. Push or draw the sample through the bed at a flow rate of 1-2 ml/min. Collect sample for analysis if desired compound has passed through the packing bed without being retained.

3. Wash:
If the desired compound was retained, wash off any weakly retained interfering compound(s) with de-ionized water or low strength buffer.

4. Elution:
Elute desired compound with 1-5 ml of a high salt concentration solution (e.g. 0.1M- 0.5M) or change elution buffer pH such that the sample compound is no longer ionized and collect for analysis

Finisterre™ SPE Applications

Extraction of Catecholamines from Urine

SPE column: **TR-F034000** Finisterre™ C18/17% 100 mg/1mL column
Sample preparation: Urine, pH 8.5 with 2 M ammonium hydroxide
Conditioning: 2 x 1mL of methanol, followed by 2 x 1mL of ammonium chloride/0.5% EDTA, pH 8.5
Sample application: Addition of 1 mL of sample
Wash: 2 x 1mL of 0.2 M ammonium chloride, pH 8.5, followed by 1mL of ammonium chloride / methanol (80:20), pH 8.5
Elution: Air dry for 2 min and elute with 2 x 1mL of 0.08 M acetic acid

Extraction of Vitamin D from Serum

SPE column: **TR-F034124** Finisterre™ Si 500 mg/3mL column
Sample preparation: Serum, 2 mL extracted with 7.5 mL of methylene chloride/methanol (33:67). Add 2.5mL of methylene chloride and shake. Allow phases to separate and collect the lower methylene-chloride layer
Conditioning: 3mL of anhydrous ether/hexane (1:9)
Sample application: Addition of extracted sample
Wash: 10mL of anhydrous ether/hexane (1:9)
Elution: 7.5mL of anhydrous ether/hexane (33:67)

Organochlorine Pesticides in Water

SPE column: **TR-F034106** Finisterre™ CN 500 mg/6mL column
Sample preparation: River water 100 mL
Conditioning: 2.5mL methanol
2.5mL ethyl acetate
2.5mL methanol
2.5mL distilled water
Sample application: Addition of sample
Wash: Force residual water out of sorbent with air.
Elution: 2.5mL ethyl acetate

Extraction of Pyridonecarboxylic-Acid Antibacterials (PCAs) from Fish Tissue

SPE column: **TR-F034146** Finisterre™ NH2 500 mg/6mL column
Sample preparation: Blend 5 g of sample is extracted with hexane/ethyl acetate 1:3 and 10 g of sodium sulfate. High speed blend and decant. Repeat and combine extracts
Conditioning: 10mL methanol, followed by 5mL of hexane/ethyl acetate 1:3
Sample application: Addition of the sample
Wash: 5mL of hexane/ethyl acetate 1:3
Elution: 10mL of acetonitrile/methanol/0.01M aqueous oxalic acid pH=3 with NaOH

Extraction of Antibiotics from Ointment

SPE column: **TR-F034184** Finisterre™ Diol 500 mg/3mL column
Sample preparation: 50 mg of ointment is extracted with 2 mL of hexane. The sample forms an insoluble suspension.
Conditioning: 3mL of hexane.
Sample application: Addition of the suspension.
Wash: 2 x 1mL of hexane. Air dry the column.
Elution: 2 x 1mL of methanol/0.1 N HCl 1:1

Extraction of Polychlorinated Biphenyls (PCBs) from transformer Oil

SPE column: **TR-F034168** Finisterre™ Florisil 1000 mg/6mL column
Sample preparation: 200 mg of transformer oil
Conditioning: 2 x 2mL of hexane.
Sample application: Addition of the transformer oil directly into the column.
Wash: No wash steps are needed.
Elution: 25mL of hexane and evaporate for GC/MS analysis.

Vacuum Manifolds for SPE

Vacuum Manifold

Teknokroma vacuum manifolds simplify SPE sample processing. These manifolds permit consistent extraction and filtration results. Analyst can save time, since these manifolds allow simultaneous multiple sample processing.

The manifolds yield consistent extraction, elution and filtration results for up to 24 columns, cartridges or 25 mm syringe filters. Filters should not be attached to the vacuum manifold port prior to elution. Filters will air-lock and prevent fluid passage if used during column conditioning, sample application, or column wash. Using filters during the final elution step will ensure a clean sample for injection. Parallel processing of this kind greatly reduces the time required to prep multiple samples.

The manifolds consist of a clear glass chamber to which vacuum is applied to draw a sample through on SPE column, cartridge, or disk.
Adjustable racks placed in the glass vacuum chamber will accommodate a variety of sample collection vessels, including test tubes, autosamplers, vials, volumetric flasks, and Erlenmeyer flasks.
Eluants are deposited directly into the collection vessel of choice via polypropylene, optional stainless steel, or Teflon needles.

Vacuum manifolds for SPE sample preparation, filtration, and elution are available in 12, 16, and 24 port configurations.

Port Vacuum Manifold complete set include: Glass chamber, cover gasket & 12 stopcocks, vacuum valve and gauge, colections racks plates (13 mm, 16 mm tubes, volumetric flask, plate base, plate dimple, lid legs, propilene needles, retaining clips for collections racks.

Cat.No	Description
TR-004012	12 Port Vacuum Manifold, Complete Set
TR-004416	16 Port Vacuum Manifold, Complete Set
TR-004824	24 Port Vacuum Manifold, Complete Set

Vacuum Pump R-300

Vacuum Pump impulsed by serving dish, without oil, declaring the innovative silent technology and mechanics.

The R-300 is adaptable to many requirements of laboratory:

- **Slow vibration and silent**
  Motor directly conducted without the mechanism of transmission and rubber feet of quality that mantain the noise level only upon approximately 50 dB.
- **Weigh compact and light**
  The aluminum mold and its precise construction make the R-300 so little and compact, with a weight of only 4,1 kg.
- **Cleanliness and maintenance**
  The design without oil makes the R-300 clean and free of maintenance, we guarantee the free supply of spare parts during two years of 3000 working hours (except humidity filter).

Cat.No	Description
BOVT 0300	Vacuum Pump R-300

	Specifications	
	Maximum vacuum	650 mm. Hg
	Vacuum Velocity	(2.5 L tank):
	0 mmHg:	17/min = 9.6 CFM
	100 mmHg:	14 l/min = 0.49 CFM
	200 mmHg:	12 l/min = 0.42 CFM
	300 mmHg:	9.5 l/min = 0.34 CFM
	400 mmHg:	7 l/min = 0.25 CFM
	500 mmHg:	4.5 l/min = 0.16 CFM
	600 mmHg:	1.5 l/min = 0.05 CFM
	Maximum flow:	13 l/min
	Motive rotation:	1450 rpm
	Potency:	1/8 CV/HP
	Poles Nbr.:	4 P
	Gross weight:	5.1 kg
	Net weight:	4.1 kg
	Entrance screw:	1/8 PS
	Noise level:	50 dB

Vacuum Manifolds Accesories

Description	12 Positions	Pk	16 Positions	Pk	24 Positions	Pk
Glass Chamber	TR-004013	1	TR-004417	1	TR-004825	1
Cover, gasket & stopcocks	TR-004014	1	TR-004418	1	TR-004826	1
Gaskets	TR-004015	2	TR-004419	2	TR-004827	1
Vacuum gauge, valve & glass chamber	TR-004016	1	TR-004420	1	TR-004828	1
Needles - Polypropylene	TR-004017	12	TR-004421	16	TR-004829	24
Needles - Stainless Steel	TR-004018	12	TR-004422	16	TR-004830	24
Collection Rack-shelves, legs, chips & posts	TR-004019	1	TR-004423	1	TR-004831	1
Plate - 13 mm	TR-004020	1	TR-004424	1	TR-004832	1
Plate - volumetric flask	TR-004021	1	---		---	
Plate - 16 mm test tube	TR-004022	1	TR-004426	1	TR-004834	1
Plate - autosampler vial	TR-004023	1	---		---	
Plate - dimple	TR-004024	1	TR-004428	1	TR-004836	1
Plate - base	TR-004025	1	TR-004429	1	TR-004837	1
Stopcoks	TR-004026	12	TR-004430	16	TR-004838	24

Drying Attachments

Drying attachments are available for the 12 and 24 port manifolds, which will direct the flow of air or nitrogen into the collection vessels to concentrate eluants, prior to further analysis.

Drying attachments can be connected, via adapters, to SPE columns or cartridges in order to dry the column or cartridge prior to final elution.

Cat.No	Description
TR-004027	12 Positions Drying Attachment
TR-004431	16 Positions Drying Attachment
TR-004839	24 Positions Drying Attachment

Disposable polypropylene waste container

The disposable polypropylene waste container simplifies clean-up of the vacuum chamber in 12 port manifolds. The disposable waste liner is a molded solvent resistant polypropylene liner that fits into the vacuum chamber of the 12 port manifolds. The liner is designed to contain all liquids used in SPE sample preparation. To use the liner, remove the manifold lid and take out the rack and shelf set. Place the disposable liner into the glass vacuum chamber, and replace
the manifold lid. Proceed with all conditioning and sample preparation steps. Just prior to final elution, the liner, containing the waste solvents, is removed from the vacuum chamber.

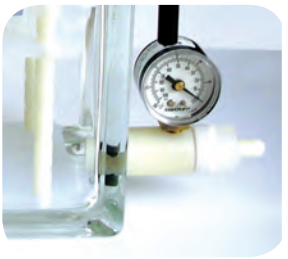
There are small handles at each end of the waste liner to facilitate its removal.

Replace the lid, and proceed with the final elutionof the analyze. Waste solvents should be properly discarded from the liner. The liner can be cleaned and re-used a number of times, prior to discarding.

Cat.No	Description	Pk
TR-004028	12 Positions PP Vacuum Waste Container	10

Vacuum Manifolds Accesories

Accesories

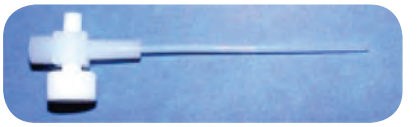


Cat.No	Description	Pk
TR-004102	Female Luer Fittings	2
TR-004103	Male Luer Fittings	2
TR-004104	Support post for rack	3
TR-004105	Legs for cover- black	4
TR-004106	Vacuum gauge & valve assembly	1
TR-004107	Valve assembly only	1
TR-004108	Vacuum gauge	1
TR-004109	Retaining clips	12
TR-004110	Vacuum manifolds plugs	50
AP-2402	Adapters for columns SPE 1, 3 and 6 ml	10

Disposable Teflon Needles

Teflon needles

Teflon control valves



Disposable teflon needles and teflon needles with flow control valves are designed to fit through the manifolds lid via the luer fitting. These needles deliver the eluant directly from the SPE extraction columns or cartridge into the collection vessel in the vacuum chamber. These needles, when used in conjunction with teflon columns
and teflon frits ensure zero extractables from the column, frits, and fluid path. This combination is especially useful for critical sample analysis, such as environmental samples.

Excellent solvent resistant and direct flow into the sample chambers are the key benefits.

Cat.No	Description	Pk
TR-004210	Teflon Needles	100
TR-004212	Teflon Needles	500
TR-004202	Teflon Control Valve	25
TR-004204	Teflon Control Valve	50

QuEChERS Finisterre by Teknokroma™

QuEChERS (Quick, Easy, Cheap, Effective, Rugged & Safe) offer a convenient and effective approach for determining pesticide residues in fruit, vegetables and other foods.

The Teknokroma Finisterre QuEChERS Extraction and Dispersive SPE kits permit to work with the specific methods, including:

1. Method **EN 15662** Foods and Plant Origin. Determination of Pesticide Residues using GC-MS and/or LC-MS/MS Following Acetonitrile Extraction/Partitioning and Clean-up by Dispersive SPE- QuEChERS.
2. Method **AOAC 2007.01.** Pesticide Residues in Food by Acetonitrile Extraction and partitioning with Magnesium sulfate.
3. Method **Mini-multiresidue QuEChERS**. Method for the Analysis of Pesticide Residues in Low-Fat Products. www.quechers.com. (2008)

These products make simple to prepare your food samples for analysis with:

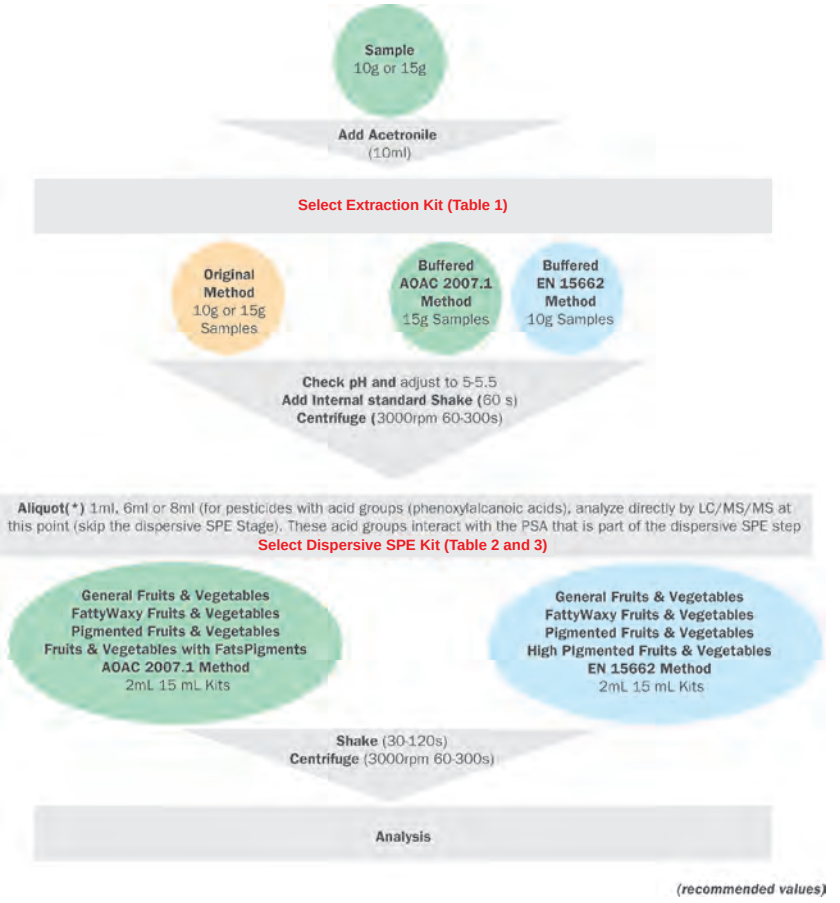
- High recoveries
- Accurate results
- High sample throughput
- Minimal solvent use
- Less labor
- Lower costs
- Simple glassware

We offer QuEChERS extraction and dispersive SPE products in a variety of standard size and formats.

Extraction kits contain preweighed salt, so you can add them after the acetonitrile step, protecting the integrity of your sample.

Dispersive SPE kits are assembled in 2 mL and 15 mL sizes, preweighed are premixed with just the right mixture of salts and sorbents for your aliquot volume.

Quechers Finisterre™



PHASE 1: Extraction

Adding solvent and salts to a small (10 or 15 g) fruit or vegetable sample enables to extract the pesticides into the organic layer.

PHASE 1 Extraction KIT - Table 1
50mL Centrifuge Tubes for Sample Extraction

P/N	Description	Qty.	Recommended Application
TR-Q5010	4g MgSO4, 1g NaCl, 1g trisodium citrate dihydrate, 0,5g disodium hydrogencitrate sesquihydrate	50	European EN-15662
TR-Q5040	6g MgSO4, 1,5g NaOAc	50	AOAC 2007.01
TR-Q5020	4g MgSO4, 1g NaCl	50	Mini-Multiresidue (10 g sample)
TR-Q5045	6g MgSO4, 1,5g NaCl	50	Mini-Multiresidue (15 g sample)
TR-Q5030	6g MgSO4, 1,5g NaCl, 1,5g sodium citrate dibasic, 750mg disodium citrate dibasic sesquihydrate	50	
TR-Q5050	6g MgSO4, 1,5g NaOAc, 750mg disodium citrate sesquihydrate	50	

PHASE 2: Dispersive SPE Clean-up

Select the dispersive SPE kit according to the type of food being analyzed and the method that you want to use. One aliquot (*) of the sample extract from Phase 1 is added to 2 mL or 15 mL centrifuge tubes (Table 2 or Table 3) containing a small quantity of SPE sorbent and MgS04.

PHASE 2 Dispersive SPE KIT Clean-Up - Table 2

2 mL Micro-centrifuge tubes

P/N	Description	Qty.	Aliquot (mL) (*)	Recommended Application
TR-Q2015	150mg MgSO4, 25mg PSA	100	1	European EN-15662 Mini-Multiresidue
TR-Q2025	150mg MgSO4, 25mg PSA, 25mg C18	100	1	European EN-15662 Mini-Multiresidue
TR-Q2035	150mg $MgSO_4$, 25mg PSA, 2,5mg GCB	100	1	European EN-15662 Mini-Multiresidue
TR-Q2045	150mg $MgSO_4$, 25mg PSA, 7,5mg GCB	100	1	European EN-15662 Mini-Multiresidue
TR-Q2055	150mg $MgSO_4$, 50mg PSA	100	1	AOAC 2007.01
TR-Q2065	150mg $MgSO_4$, 50mg PSA, 50mg C18	100	1	AOAC 2007.01
TR-Q2075	150mg $MgSO_4$, 50mg PSA, 50mg GCB	100	1	AOAC 2007.01
TR-Q2085	150mg $MgSO_4$, 50mg PSA, 50mg C18, 50mg GCB	100	1	AOAC 2007.01
TR-Q2090	150mg MgSO4, 25mg C18	100	1	AOAC 2007.01
TR-Q2095	150mg MgSO4, 50mg PSA, 50mg C18, 7,5mg GCB	100	1	

15 mL Centrifuge tubes - Table 3

P/N	Description	Qty.	Aliquot (mL) (*)	Recommended Application
TR-Q1590	900mg $MgSO_4$, 150mg PSA	50	6	European EN-15662
TR-Q1593	900mg $MgSO_4$, 150mg PSA, 150mg C18	50	6	European EN-15662
TR-Q1591	900mg $MgSO_4$, 150mg PSA, 15mg GCB	50	6	European EN-15662
TR-Q1592	900mg $MgSO_4$, 150mg PSA, 45mg GCB	50	6	European EN-15662
TR-Q1510	1200mg $MgSO_4$, 400mg PSA	50	8	AOAC 2007.01
TR-Q1525	1200mg MgSO4, 400mg PSA, 400mg C18, 60mg GCB	50	8	AOAC 2007.01
TR-Q1515	1200mg $MgSO_4$, 400mg PSA, 400mg C18	50	8	AOAC 2007.01
TR-Q1516	1200mg $MgSO_4$, 400mg PSA, 400mg GCB	50	8	AOAC 2007.01
TR-Q1520	1200mg $MgSO_4$, 400mg PSA, 400mg C18, 400mg GCB	50	8	AOAC 2007.01
TR-Q1596	900mg $MgSO_4$, 150mg C18	50	6	AOAC 2007.01
TR-Q1594	900mg $MgSO_4$, 300mg PSA, 150mg GCB	50	6	---
TR-Q1593	900mg $MgSO_4$, 150mg PSA, 150mg C18	50	6	---
TR-Q1595	900mg $MgSO_4$, 300mg PSA, 150mg C18	50	6	---
TR-Q1600	750mg $MgSO_4$, 250mg PSA, 250mg C18, 250 mg GCB	50	6	---
TR-Q501015	4g MgSo4, 1g NaCl, 1g Trisodium Citrate dhydrate, 0,5g disodium hydrogencitrate sesquihydrate	50	6	---
TR-Q1700	900 mg Na_2SO_4, 1000mg PSA, 1000mg C18	50	6	

PSA= Primary and secondary exchange material

GCB= Graphitized carbon blank

Quechers Finisterre™

2 mL Easy lock Micro-centrifuge tubes

P/N	Description	Qty.	Aliquot (mL) (*)	Recommended Application
TR-Q2015C	150mg MgSO4, 25mg PSA	100	1	European EN-15662 Mini-Multiresidue
TR-Q2025C	150mg MgSO4, 25mg PSA, 25mg C18	100	1	European EN-15662 Mini-Multiresidue
TR-Q2035C	150mg $MgSO_4$, 25mg PSA, 2,5mg GCB	100	1	European EN-15662 Mini-Multiresidue
TR-Q2045C	150mg $MgSO_4$, 25mg PSA, 7,5mg GCB	100	1	European EN-15662 Mini-Multiresidue
TR-Q2055C	150mg $MgSO_4$, 50mg PSA	100	1	AOAC 2007.01
TR-Q2065C	150mg $MgSO_4$, 50mg PSA, 50mg C18	100	1	AOAC 2007.01
TR-Q2075C	150mg $MgSO_4$, 50mg PSA, 50mg GCB	100	1	AOAC 2007.01
TR-Q2085C	150mg $MgSO_4$, 50mg PSA, 50mg C18, 50mg GCB	100	1	AOAC 2007.01
TR-Q2090C	150mg MgSO4, 25mg C18	100	1	AOAC 2007.01
TR-Q2095C	150mg MgSO4, 50mg PSA, 50mg C18, 7,5mg GCB	100	1	

Selection Guide for Dispersive Kits. Phase 2

		Methods			
Types	**Qt Pack**	**EN 15662**	**AOAC 2007.1**	**Mini Multiresidue**	**Others**
General Fruits and Vegetables: **Removes polar organic acids, some sugars and lipids**					
	100 tubes 2 mL	25 mg PSA 150 mg MgSO4 **Part Nº TR-Q2015**	50 mg PSA 150 mg MgSO4 **Part No. TR-Q2055**	25 mg PSA 150 mg MgSO4 **Part No. TR-Q2015**	
	50 tubes 15 mL	150 mg PSA 900 mg MgSO4 **Part No. TR-Q1590**	400 mg PSA 1200 mg MgSO4 **Part No. TR-Q1510**		
Fruits and Vegetables with Fats and Waxes: **Removes polar organic acids, some sugars, more lipids and sterols**					
	100 tubes 2 mL	25 mg PSA 25 mg C18 150 mg MgSO4 **Part No.TR-Q2025**	50 mg PSA 50 mg C18 150 mg MgSO4 **Part No. TR-Q2065**	25 mg PSA 25 mg C18 150 mg MgSO4 **Part No. TR-Q2025**	
	50 tubes 15 mL	150 mg PSA 150 mg C18 900 mg MgSO4 **Part No. TR-Q1593**	400 mg PSA 400 mg C18 1200 mg MgSO4 **Part No. TR-Q1515**		150 mg PSA 150 mg C18 900 mg MgSO4 **TR-Q1593**

Selection Guide for Dispersive Kits. Phase 2

Pigmented Fruits and Vegetables:
Removes polar organic acids, some sugars and lipids, and carotinoides and chlorophyll; not for use with planar pesticides

Types	Qt Pack	Methods			
		EN 15662	AOAC 2007.1	Mini Multiresidue	Others
	100 tubes 2 mL	25 mg PSA 2.5 mg GCB 150 mg MgSO4 **Part No.TR-Q2035**	50 mg PSA 50 mg GCB 150 mg MgSO4 **Part No. TR-Q2075**	25 mg PSA 2,5 mg GCB 150 mg MgSO4 **Part No. TR-Q2035**	50 mg PSA 50 mg GCB 150 mg MgSO4 **TR-Q2075**
	50 tubes 15 mL	150 mg PSA 400 mg GCB 900 mg MgSO4 **Part No. TR-Q1591**	400 mg PSA 400 mg C18 1200 mg MgSO4 **Part No. TR-Q1516**		
	50 tubes 15 mL	150 mg PSA 45 mg GCB 900 mg MgSO4 **Part No. TR-Q1592**			300 mg PSA 150 mg GCB 900 mg MgSO4 **TR-Q1594**

Fruits and Vegetables with Pigments and Fats:
Removes polar organic acids, some sugars and lipids, plus carotinoides and chlorophyll; not for use with planar pesticides

	100 tubes 2 mL		50 mg PSA 50 mg C18 50 mg GCB 150 Mg MgSO4 **Part No. TR-Q2085**	25 mg PSA 7,5 mg GCB 150 mg MgSO4 **Part No. TR-Q2045**
	50 tubes 15 mL		400 mg PSA 400 mg C18 400 mg GCB 1200 Mg MgSO4 **Part No. TR-Q1520**	

QuEChERS Finisterre by Teknokroma™

15 mL Centrifuge tubes

2 mL Micro-centrifuge tubes

2 mL Easy lock Micro-centrifuge tubes

Quechers Finisterre™

PHASE 1: Extraction

Adding solvent and salts to a small (10 or 15 g) fruit or vegetable sample enables to extract the pesticides into the organic layer.

PHASE 1 Extraction Pouches - Table 1
QuEChERS Salt/Sorbent Pouches for Sample Extraction

P/N	Description	Qty.	Recommended Application
TR-Q5010K	4g $MgSO_4$, 1g NaCl, 1g trisodium citrate dihydrate, 0,5g disodium hydrogencitrate sesquihydrate	50	European EN-15662
TR-Q5040K	6g $MgSO_4$, 1,5g NaOAc	50	AOAC 2007.01
TR-Q5020K	4g $MgSO_4$, 1g NaCl	50	Mini-Multiresidue (10 g sample)
TR-Q5045K	6g $MgSO_4$, 1,5g NaCl	50	Mini-Multiresidue (15 g sample)
TR-Q5030K	6g $MgSO_4$, 1,5g NaCl, 1,5g sodium citrate dibasic, 750mg disodium citrate dibasic sesquihydrate	50	
TR-Q5050K	6g $MgSO_4$, 1,5g NaOAc, 750mg disodium citrate sesquihydrate	50	

PHASE 2: Dispersive SPE Clean-up Pouches for 2 or 15ml tubes

Select the dispersive SPE kit according to the type of food being analyzed and the method that you want to use. One aliquot (*) of the sample extract from Phase 1 is added to 2 mL or 15 mL centrifuge tubes (Table 2 or Table 3) containing a small quantity of SPE sorbent and $MgS04$.

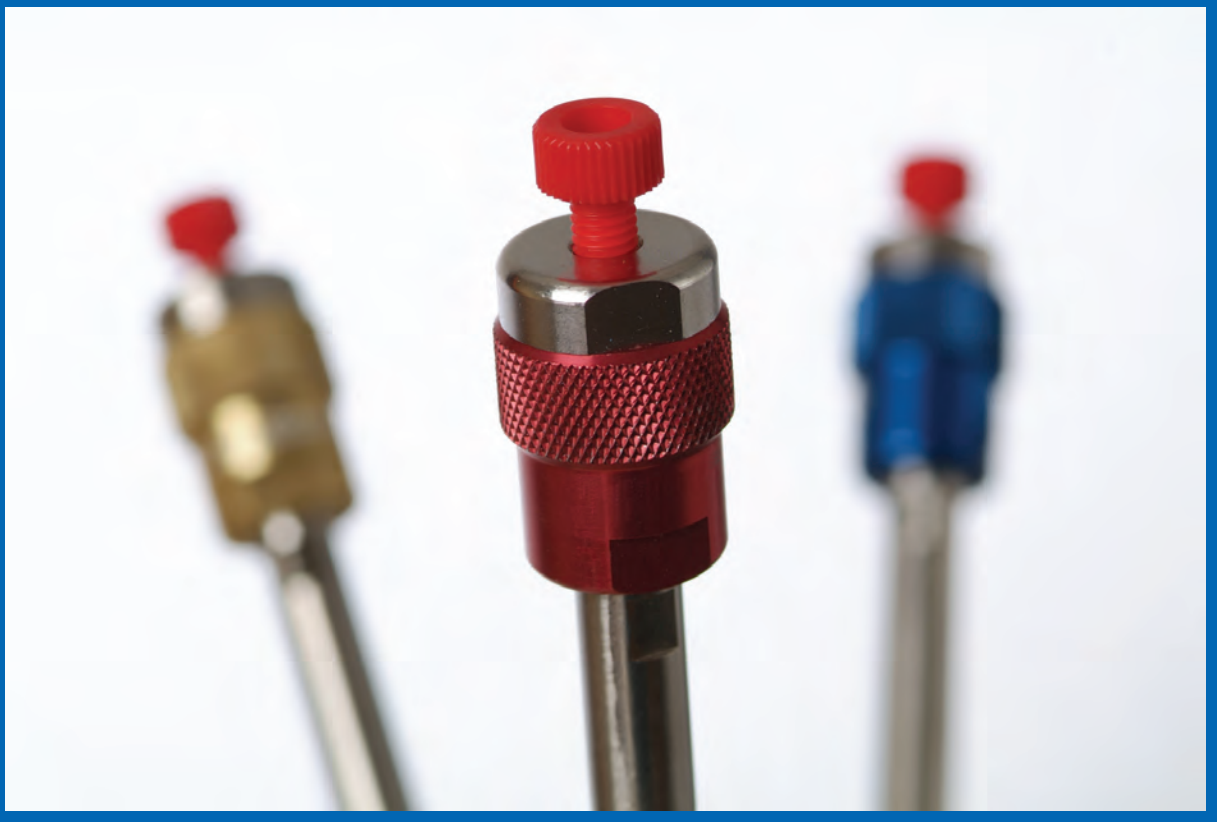
Table 1 Pouches for 2ml tubes

P/N	Description	Qty.	Aliquot (mL) (*)	Recommended Application
TR-Q2015K	150mg $MgSO4$, 25mg PSA	50	1	European EN-15662 Mini-Multiresidue
TR-Q2025K	150mg $MgSO4$, 25mg PSA, 25mg C18	50	1	European EN-15662 Mini-Multiresidue
TR-Q2035K	150mg $MgSO_4$, 25mg PSA, 2,5mg GCB	50	1	European EN-15662 Mini-Multiresidue
TR-Q2045K	150mg $MgSO_4$, 25mg PSA, 7,5mg GCB	50	1	European EN-15662 Mini-Multiresidue
TR-Q2055K	150mg $MgSO_4$, 50mg PSA	50	1	AOAC 2007.01
TR-Q2065K	150mg $MgSO_4$, 50mg PSA, 50mg C18	50	1	AOAC 2007.01
TR-Q2075K	150mg $MgSO_4$, 50mg PSA, 50mg GCB	50	1	AOAC 2007.01
TR-Q2085K	150mg $MgSO_4$, 50mg PSA, 50mg C18, 50mg GCB	50	1	AOAC 2007.01
TR-Q2090K	150mg $MgSO_4$, 25mg C18	50	1	AOAC 2007.01
TR-Q2095K	150mg $MgSO_4$, 50mg PSA, 50mg C18, 7,5mg GCB	50	1	AOAC 2007.01

Table 2 Pouches for 15ml tubes

P/N	Description	Qty.	Aliquot (mL) (*)	Recommended Application
TR-Q1590K	900mg $MgSO_4$, 150mg PSA	50	6	European EN-15662
TR-Q1593K	900mg $MgSO_4$, 150mg PSA, 150mg C18	50	6	European EN-15662
TR-Q1591K	900mg $MgSO_4$, 150mg PSA, 15mg GCB	50	6	European EN-15662
TR-Q1592K	900mg $MgSO_4$, 150mg PSA, 45mg GCB	50	6	European EN-15662
TR-Q1510K	1200mg $MgSO_4$, 400mg PSA	50	8	AOAC 2007.01
TR-Q1525K	1200mg MgSO4, 400mg PSA, 400mg C18, 60mg GCB	50	8	AOAC 2007.01
TR-Q1515K	1200mg $MgSO_4$, 400mg PSA, 400mg C18	50	8	AOAC 2007.01
TR-Q1516K	1200mg $MgSO_4$, 400mg PSA, 400mg GCB	50	8	AOAC 2007.01
TR-Q1520K	1200mg $MgSO_4$, 400mg PSA, 400mg C18, 400mg GCB	50	8	AOAC 2007.01
TR-Q1596K	900mg $MgSO_4$, 150mg C18	50	6	AOAC 2007.01
TR-Q1594K	900mg $MgSO_4$, 300mg PSA, 150mg GCB	50	6	---
TR-Q1593K	900mg $MgSO_4$, 150mg PSA, 150mg C18	50	6	---
TR-Q1595K	900mg $MgSO_4$, 300mg PSA, 150mg C18	50	6	---
TR-Q1600K	750mg $MgSO_4$, 250mg PSA, 250mg C18, 250 mg GCB	50	6	---
TR-Q501015K	4g MgSo4, 1g NaCl, 1g Trisodium Citrate dhydrate, 0,5g disodium hydrogencitrate sesquihydrate	50	6	---
TR-Q1700K	900 mg Na_2SO_4, 1000mg PSA, 1000mg C18	50	6	---

***NOTE:** If you want the pouches plus the tubes just add a **"T"** to the P/N like the below example **TR-Q1590KT**: 900mg $MgSO_4$, 150 mg PSA in pouches plus 15 ml Tubes ***




200 µL
100 µL
20 µL
LOAD
INJECT