

## Finisterre by Teknokroma™



### Technical Information of Finisterre™ SPE Cartridges

Teknokroma introduces in the market the new 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<sub>2</sub>, 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

# Tk 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

**Higher Carbon Load:** 17.0 %

**Silica 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

## Finisterre™ C8 SPE Columns



**Retention Mechanism:** Reverse phase.

**Functional Group:** Octyl (C8)

**Endcapped:** yes

**Higher Carbon Load:** 8.5 %

**Silica 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

## Finisterre™ C4 SPE Columns



**Retention Mechanism:** Reverse phase.

**Functional Group:** Butyl (C4)

**Endcapped:** yes

**Higher Carbon Load:** 5.0 %

**Silica 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 or C8

- Analgesics from blood

Cat.No	Description	pk
TR-F034040	Finisterre SPE Columns C4 100mg/1ml	100
TR-F034042	Finisterre SPE Columns C4 200mg/3ml	50
TR-F034044	Finisterre SPE Columns C4 500mg/3ml	50
TR-F034046	Finisterre SPE Columns C4 500mg/6ml	30
TR-F034048	Finisterre SPE Columns C4 1000mg/6ml	30
TR-F034050	Finisterre SPE Columns C4 1000mg/12ml	20

# Finisterre™ SPE Columns **Tk**

## Finisterre™ C2 SPE Columns



**Retention Mechanism:** Reverse phase.  
**Functional Group:** Ethyl (C2)  
**Endcapped:** yes  
**Higher Carbon Load:** 5.5 %  
**Silica 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

## Finisterre™ PH SPE Columns



**Retention Mechanism:** Reverse phase.  
**Functional Group:** Phenyl (PH)  
**Endcapped:** yes  
**Higher Carbon Load:** 3.8 %  
**Silica Base:** Irregular Shape  
**Average Particle Size** 50 µm  
**Pore Diameter:** 60 Å  
**Hardware:** Polypropylene  
**Frit:** Polyethylene 20 µm porosity

### 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

## 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  
**Higher Carbon Load:** 4.0 %  
**Silica 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

## Finisterre™ NH<sub>2</sub> SPE Columns



**Retention Mechanism:** Weak anion exchange with aqueous matrix, normal phase with non-polar organic matrix.  
**Functional Group:** Aminopropyl (NH<sub>2</sub>)  
**Endcapped:** no  
**Higher Carbon Load:** 5.0 %  
**Silica 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 NH <sub>2</sub>	100mg/1ml	100
TR-F034142	Finisterre SPE Columns NH <sub>2</sub>	200mg/3ml	50
TR-F034144	Finisterre SPE Columns NH <sub>2</sub>	500mg/3ml	50
TR-F034146	Finisterre SPE Columns NH <sub>2</sub>	500mg/6ml	30
TR-F034148	Finisterre SPE Columns NH <sub>2</sub>	1000mg/6ml	30
TR-F034150	Finisterre SPE Columns NH <sub>2</sub>	1000mg/12ml	20

# Tk Finisterre™ SPE Columns

## Finisterre™ DIOL SPE Columns



**Retention Mechanism:** Normal phase  
**Functional Group:** DIOL (2OH)  
**Endcapped:** no  
**Higher Carbon Load:** 6.0 %  
**Silica 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-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

## Finisterre™ FLO 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-F034120	Finisterre Si SPE Column	100mg/1ml	100
TR-F034122	Finisterre Si SPE Column	200mg/3ml	50
TR-F034124	Finisterre Si SPE Column	500mg/3ml	50
TR-F034126	Finisterre Si SPE Column	500mg/6ml	30
TR-F034128	Finisterre Si SPE Column	1000mg/6ml	30
TR-F034130	Finisterre Si SPE Column	1000mg/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

## Finisterre™ SAX SPE Columns



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

### 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

## Finisterre™ SCX SPE Columns



**Retention Mechanism:** Cation exchange  
**Functional Group:** Benzene sulfonic acid  
**Base:** Styrene-divinylbenzene  
**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

Finisterre™ SPE columns are simple to use and allow 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, basically: 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 weight.

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 accessible to the sample. In general for 100 mg of packing you can pass 2 ml of two solvent, generally 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.