Example of publication with Interchim SPE product

Upti-Clean™ CN
Chadi Abbara and all, Laboratoire de Pharmacologie, Service de Pharmacie & Service d'addictologie Hôpital Paul BROUSSE 94800 Villejuif, France ; Journal of Pharmaceutical and Biomedical Analysis 41 (2006) 1011–1016 ; Development and validation of a method for the quantitation of 9tetrahydrocannabinol in human plasma by high performance liquid chromatography after solid-phase extraction.

Upti-Clean™ SI
F. Boudsocq, P. Benaim, Y. Canitrot, M. Knibiehler, F. Ausseil, J. P. Capp, A. Bieth, C. Long, B. David, I. Shevelev, E. Frierich-Heinecken, U. Hubscher, F. Amalric, G. Massiot, J. S. Hoffmann, and C. Cazaux, Equipe Instabilité´ Génétique et Cancer, Institut de Pharmacologie et de Biologie Structurale, Unité´ Mixte Recherche Centre National de la Recherche Scientifique 5089 (F.B., P.B., Y.C., J.P.C., A.B., J.S.H., C.C.), Centre de Recherche en Pharmacologie-Santé´ , Unité´ Mixte Recherche Centre National de la Recherche Scientifique/P. Fabre 2587 (M.K.), Centre de Criblage Pharmacologique, Unité´ Mixte Recherche Centre National de la Recherche Scientifique/P. Fabre 2646 (F.A.), and Chimie des Substances Naturelles Bioactives, Unité´ Mixte Recherche Centre National de la Recherche Scientifique/P. Fabre 2597 (C.L., B.D., G.M.), Institut de Sciences et Technologies du Médicament de Toulouse 3, Toulouse, France; and Institute of Veterinary Biochemistry and Molecular Biology, University of Zurich, Zurich, Switzerland (E.F.-H., U.H.) ; MOLECULAR PHARMACOLOGY Mol Pharmacol 67:1485–1492, 2005 , Modulation of Cellular Response to Cisplatin by a Novel Inhibitor of DNA Polymerase B.

Atoll™ XC
R.Déporte and all, Department of Pharmacokinetic & Department of Biostatistic, Anticancer Centre René Gauducheau 44805 Nantes, France ; Journal of Chromatography B, xxx (2006) xxx–xxx ; High-performance liquid chromatographic assay with UV detection for measurement of dihydrouracil / uracil ratio in plasma.

Upti-Clean™ SI/CN
Roberto Alzaga and all, Environmental Chemistry Department, IIQAB-CSIC, Jordi Girona 18–26, E-08034 Barcelona, Spain ; Journal of Chromatography A, 1025 (2004) 133–138 ; Fast solid-phase extraction–gas chromatography–mass spectrometry procedure for oil fingerprinting Application to the Prestige oil spill.

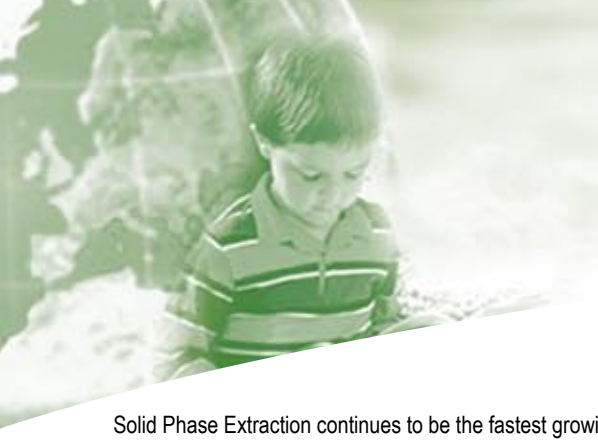
Upti-Clean™ C18U
Sandrine Demanèche and all, Laboratoire de Biochimie et Biophysique des Systèmes Intégrés, Unité Mixte de Recherche CEA-CNRS-Université Joseph Fourier-UMR5092, Laboratoire de Chimie des Protéines, Département de Réponse et Dynamique Cellulaires, CEA-Grenoble, Grenoble, France ; Applied and Environmental Microbiology, 2004 November, p. 6714–6725 ; Identification and Functional Analysis of Two Aromatic-Ring-Hydroxylating Dioxygenases from a Sphingomonas Strain That Degrades Various Polycyclic Aromatic Hydrocarbons.

Upti-Clean™ C18U
Serge Krivobok and all, Laboratoire de Biochimie et Biophysique des Systèmes Intégrés and Laboratoire de Chimie des Protéines, Département de Réponse et Dynamique Cellulaires, CNRS UMR 5092, CEA-Grenoble, 38054 Grenoble Cedex 9, France ; JOURNAL OF BACTERIOLOGY, July 2003, p. 3828–3841; Identification of Pyrene-Induced Proteins in Mycobacterium sp. Strain 6PY1: Evidence for Two Ring-Hydroxylating Dioxygenases.

Atoll™ XC & Upti-Clean™ Florisil
J. Le Faouder, E. Bichon and all, LABERCA, Ecole Nationale Vétérinaire de Nantes, Route de Gachet, Atlanpôle La Chantrerie, BP 50707, 44087 Nantes Cedex 03, France ; Science Direct, Talanta 73 (2007) 710-717, Transfer assessment of fipronil residues from feed to cow milk.

Atoll™ XWP
A.Salvador and all, Université Claude Bernard UMR 5180 69622 Villeurbanne & CEPHAC Europe 86281Saint-Benoit, France ; Chromatographia 2006, 63, 609-615 ; Simultaneous LC-MS-MS Analysis of Capecitabine and its Metabolites (5¢-deoxy-5-fluorocytidine, 5¢-deoxy-5-fluorouridine, 5-fluorouracil) After Off-Line SPE from Human Plasma.

Atoll™ ATH
Séverine Compain, Dimitri Schlemmer, Mikael Levi and all, CEA, Service de Pharmacologie et d'Immunologie, DSV/DRM, CEA/Saclay, 91191 Gif-sur-Yvette Cedex and SPIBIO, Parc d'Activite´ du Pas du Lac, 10 bis avenue Ampère, F-78180 Montigny le Bretonneux, France ; JOURNAL OF MASS SPECTROMETRY, J. Mass Spectrom. 2005; 40: 9–18 ; Development and validation of a liquid chromatographic/tandem mass spectrometric assay for the quantitation of nucleoside HIV reverse transcriptase inhibitors in biological matrices.



Sample Prep - Solid Phase Extraction

Introduction

Solid Phase Extraction continues to be the fastest growing technique utilised for sample preparation. The ease of use and flexibility of SPE means that increasingly, this is the chosen pre-step adopted to clean and concentrate samples prior to analysis in HPLC, HPLC/MS, GC or GC/MS.
Advances in the analytical process are placing greater demands and expectations on sample cleaning and therefore increasing the quality required from SPE products. For this reason, polymeric sorbents with high loading capacities and spherical ultrapure silica have become widespread.

Recovery, capacity, selectivity & reproducibility are the principal sample prep. demands of todays analyst. We have developed a state-of-the-art SPE product range incorporating silica and polymer based technology. Upti-prep™ (silica) and Atoll™ (polymeric) push the boundaries of expectation from modern day sample preparation challenges.

Interchim's full range of SPE products is highlighted within this chapter. The typical procedure for the SPE process is described below and considerations toward sorbent and working format selection follow.

Typical SPE procedure

Bed volume definition :
The bed volume is defined as the minimum volume of solvent necessary to wet the defined quantity of sorbent within the column. This can vary depending on the nature of the sorbent.
e.g. : ~ 120 µl per 100 mg of silica gel sorbent 60 Å
~ 600 µl per 500 mg of silica gel 60 Å

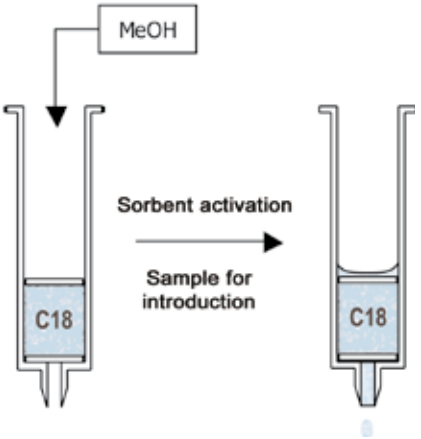
[Incomplete elution of compound of interest will occur if the sorbent mass is too large for the volume of solvent used.
Incomplete retention of compounds of interest will occur if there is an inadequate sorbent mass leading to compound eluting in the fraction or in the washing solvent. Such cases lead to lower recovery rates].

Technical tips

- Check solvent miscibility before using.
- Keep the solvent level beyond the sorbent to maintain its activated status.
- For ion exchange bonded silica, activate with methanol, water and then water buffered to the pH of choice.
- Vacuum & positive pressure manifolds are recommended to achieve more reproducible extractions

1. Conditioning Step

Sorbent activation and functional group activation are achieved by passing a volume of an appropriate solvent or a mixture of solvent, through the column. Column frits are simultaneously solvated.
Methanol or acetonitrile are commonly used for activating hydrophobic sorbents, whilst hexane or dichloromethane activate hydrophilic sorbents. 2 to 4 bed volumes are typically recommended.



2. Sample loading step

Apply sample onto the upper part of the sorbent bed. Matrix contaminants may pass through the column unretained, and additionally, other matrix components may be more or less strongly retained on the sorbent surface. To get a maximum purification efficiency, the sample flow needs to be controlled.
To achieve faster flow of viscous sample through a column, 90 to 140 µm sorbents can be used. The exchange capacity and selectivity are unaffected.
[It is necessary to analyze the unretained fraction to check if all compounds of interest have been retained]

3. Washing step

Passing solvents through columns washes away interfering compounds whilst leaving the analyte undisturbed on the sorbent bed. Different solvents or solvent mixtures may be used to improve the rinsing efficiency.

4. Drying step

Solvent traces are evaporated by circulating air through the column over a 2 to 10 minute time period. This improves the extraction yield.

5. Elution step

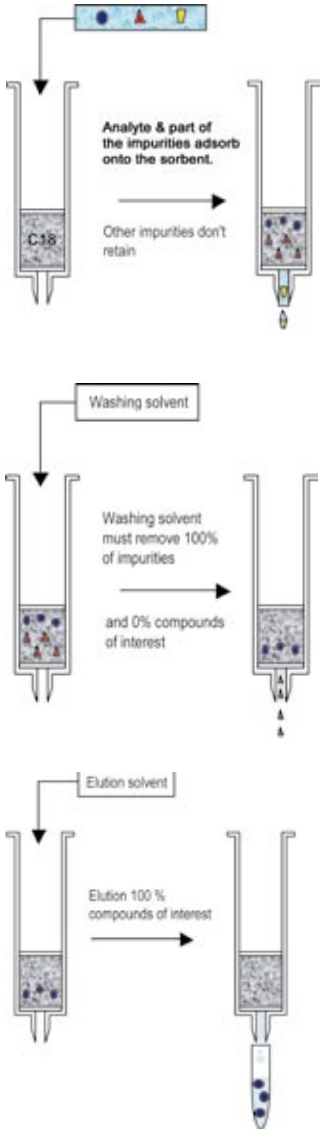
An appropriate solvent is passed through the column to disrupt the analyte-sorbent interaction and to elute 100% of compounds of interest.

The appropriate solvent must have maximum interaction with the compound of interest and a minimal interaction with the remaining impurities, leaving them undisturbed on the sorbent bed. In addition the volume of the elution solvent needs to be as small as possible to maximise the concentration factor.
[Sorbent with low particle size (e.g 30,50 µm) gives a lower elution volume than larger sorbent particle size (e.g 90, 140 µm)].

6. Concentration step

Compounds of interest are concentrated by evaporating a part of the solvent.
If necessary, dry the eluate with anhydrous sulfate to remove possible water traces.The concentrated sample is then ready for analysis.

Interchim recommends that all steps should be carefully optimized according to your specific extraction. This will improve the quality of the final analysis.



Sample Prep - Solid Phase Extraction

Selecting the appropriate sorbent

Sorbent selection requires consideration of sample volume, the nature of the analyte, analyte concentration and the inherent properties of the sorbent itself. For environmental studies, a volume of several hundred millilitres might be necessary for a good pre-concentration (e.g., organic pollutants) whereas in the pharmaceutical industry, the sample volumes that require cleaning may only be millilitres.

The selected sorbent needs to have an excellent affinity for the compounds of interest and at the same time a weak affinity for irrelevant compounds within the matrix. Choosing the correct sorbent results in a specific selectivity for the compounds of interest. A sufficient loading capacity also needs to be identified to optimise retention volumes of the desired compound.

There are four general modes used in Solid Phase Extraction : reversed phase, normal phase and ion exchange that require different sorbent types namely hydrophobic, hydrophilic, ion-exchange and mixed mode.

Hydrophobic sorbents

In reversed phase, the non polar functional groups of the sorbent operate according to Van der Waals forces. Alkyl and aromatic chains are function groups that have affinity with non-polar and mid-polar compounds.
Free silanol groups left on the sorbent favour polar interactions.
For aromatic compounds, eg, pharma-based chemistries, we recommend to use phenyl selectivity (polystyrene divinylbenzene polymers).

Hydrophilic sorbents

Normal phase provides an efficient cleaning of molecules with polar function groups.
Cyano (CN) functional groups can be used either in normal phase to extract polar compounds or in reversed phase for mid-polar compounds.
Diol functional groups can enhance polar compound extraction compared to virgin silica.
Amino sorbent (NH_2) can be used either as weak anion exchangers (for strong acids), or as a polar sorbent that can interact with OH, NH, SH ...

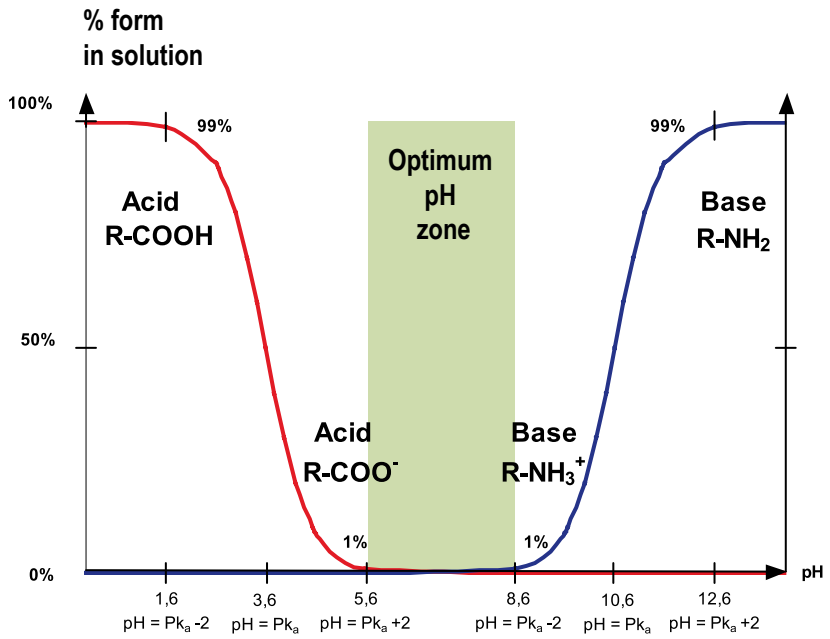
Ion exchange sorbents

Ion-exchange retention is based on ionic interaction. This sorbent creates a strong attraction with opposite functional groups of the sample compounds.
Ion exchange sorbent interactions depend essentially on counter-ion pH and ionic strength.
Strong anion exchange phases (SAX) possess a strong quaternary amine. They are used to extract weak acids which have one or more negative charges.
Strong cation exchange phases (SCX) contain sulfonic acid that are used to extract weak basic compounds which have one or more positive charges.
Weak anion exchange phases (DEAE, NH2) possess a diethyl amino ethyl and amino group. They are used to extract strong acids which have one or more negative charges.
Weak cation exchange phases (WCX) contain carboxylic acid that are used to extract strong basic compounds which have one or more positive charges.

Mixed mode sorbents

Mixed mode sorbents exhibit the greatest selectivity. Ion exchange and hydrophobic chains are bonded onto the surface of silica providing unique selectivity.
This technique is used for basic compound extraction especially for drugs and metabolites within biologic fluids. Initially compounds that possess acid or basic functionality are retained by ion exchange functionality. A washing step with an appropriate pH, removes ionizable impurities. Passing an organic solvent through the column will then remove retained impurities that result from hydrophobic bonding.

Selecting the appropriate sorbent



Ion-exchange capacity

The capacity of ion-exchange or mixed mode sorbent is measured by the mass of ionizable compounds that interact with a pre-defined sorbent mass.

E.g : For 1g of bonded SCX sorbent with an exchange capacity of 0.6 meq/g, it is possible to retain 0.6 mmol of compound.

Optimal pH

Acids and bases in the sample need to be in their ionized form to develop interactions with the sorbent.

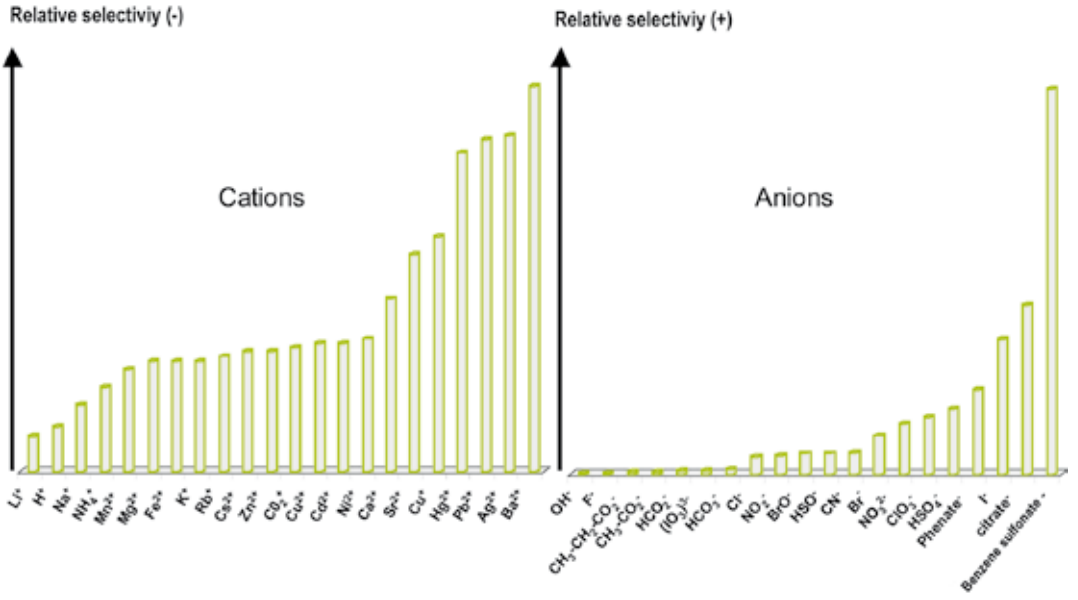
To maintain reproducible and repeatable recovery rates, sample and sorbent need to be buffered at an optimised pH.

Eg : for an acid w/pKa 3.6 & a base w/pKa 10.6, the pH zone should be between pH :5.6 and 8.6.

Relative selectivity of the counter-ions

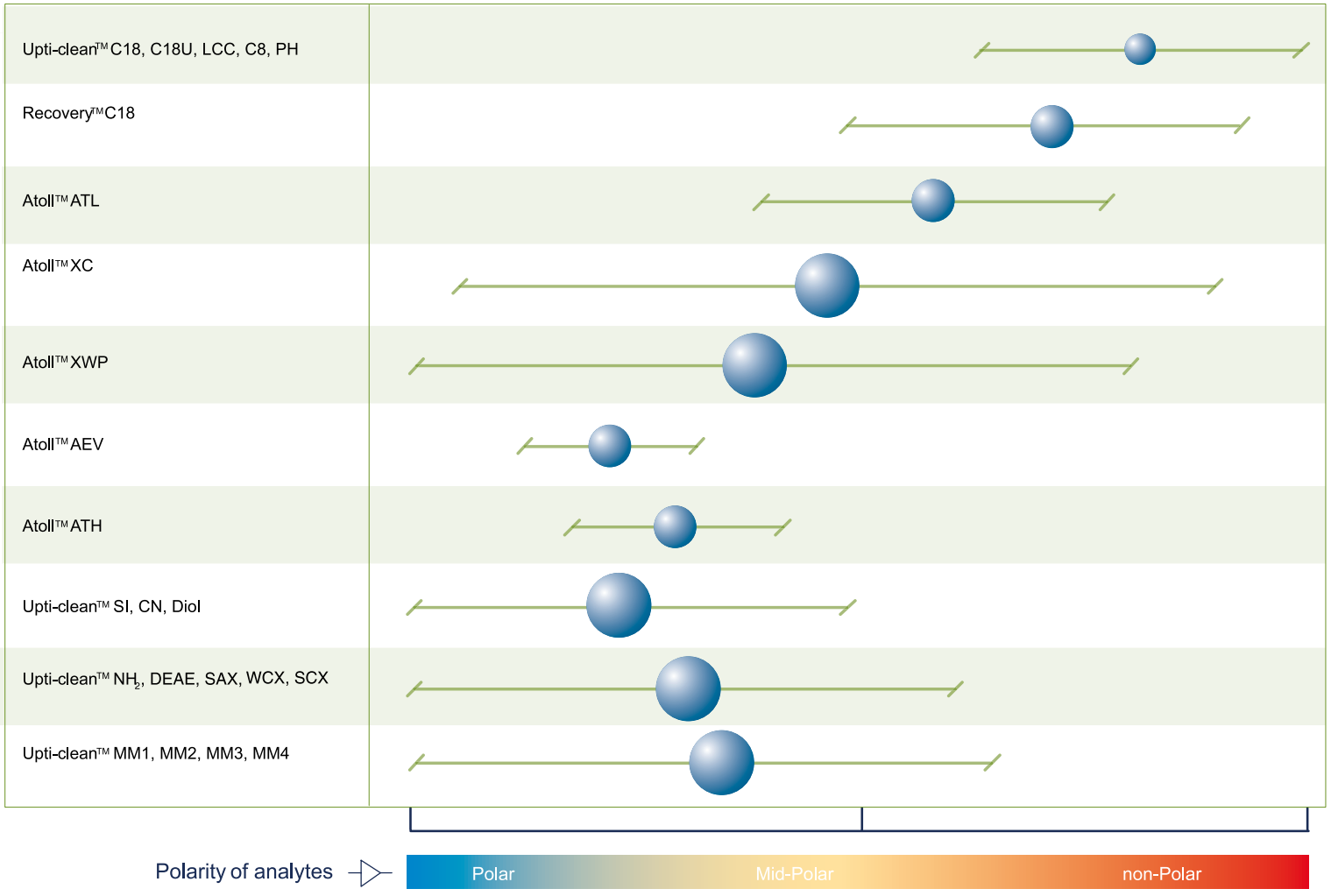
A counter-ion is an ionic entity able to interact with an ion exchange sorbent.

It improves the efficiency of cleaning steps including elution according to its concentration in solution and its affinity with the exchanger sorbent.



Sample Prep - Solid Phase Extraction

Sorbent selection guide



Sorbent Properties & Characteristics

Sorbent Selection

Silicas & Polymers are the most popular sorbents used for Solid Phase Extraction. Polymer loading capacities are higher than silica sorbents, however, silica sorbents exhibit greater selectivity. Sorbent features are highlighted below and provide the analyst with an initial consideration for appropriate sorbent selection.

Polymers :

Polymer sorbents are very stable from pH 1 to 14, they exhibit high loading capacities allowing for the cleaning of a broad range of compounds through a variety of matrices (waters, oils, plasma, urines…). Interchim polymers have a very high specific surface area that maximises pi-pi interactions. The capacity of our polymers are typically 15% greater than competitive polymers and 25% higher than silicas. These polymers are particularly suited for polar compound cleaning. The polymer surface can be easily modified and facilitates a large selectivity range from hydrophobic to hydrophilic interactions.

Silicas :

Silica & bonded silica are rigid supports that do not shrink or swell with solvents. The silica surface can be easily modified, this creates a potential for a large selectivity for SPE from hydrophobic to hydrophilic interactions. The pH stability of bonded silica is limited, typically to within the range of 2 to 7.5, this is chemistry dependant. Interchim offers more than 30 different silica based selectivities. Our sorbents take advantage of our ultra pure spherical silca (Upti-prep), and this achieves greater reproducibility, and establishes repeatable extraction and optimized sample recoveries.

The Interchim Product range :

Atoll™ (polymer), Upti-Clean™ (silica) and Recovery™ (silica) are Interchim's sorbent technologies for Solid Phase Extraction.

Within any sample cleanup process, the analyst has to consider the characteristics of their sample relative to the features of the SPE products available. Interchim provides, on a custom basis, method development kits which combine sorbent type, quantity of media and suitable housing format.

Please contact Interchim's technical support center for assistance in your selection process.

Sample Prep - Solid Phase Extraction

Sorbent Properties & Characteristics

Description	Sorbent	Interchim type	Comment	Exchange capacity	End-capping	Porosity Å	Specific surface area m^2/g	Particle diameter µm	Rank	Purity
Atoll	PSDVB	30XC	High capacity		No	n.a.	1500	30	Spherical	Pure
Atoll	PSDVB	XC	High capacity		No	n.a.	1500	70	Spherical	Pure
Atoll	PSDVB	XWP	High capacity		No	Wide Pore	1200	90	Spherical	Pure
Atoll	n.a.	ATH	Hydrophilic		No	70	800	75	Spherical	Pure
Atoll	n.a.	30ATH	Hydrophiic		No	70	800	30	Spherical	Pure
Atoll	PSHEMA	30AEV	Hydrophilic / hydrophobic		No	70	800	30	Spherical	Pure
Atoll	PSHEMA	AEV	Hydrophilic / hydrophobic		No	70	800	75	Spherical	Pure
Atoll	PSDVB	ATL	Hydrophobic		No	70	800	100	Spherical	Pure
Recovery	Silica Upti-prep	REC	C18		n.a.	n.a.	n.a.	50	Spherical	Pure
Recovery	Silica Upti-prep	RSI	SI		No	n.a.	n.a.	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	C18-S	% C : 18		Yes	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	C18U-S	% C : 16		No	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	LCC	% C : 10		Yes	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	RPAQ	C18, 100% hydrophilic		No	n.a.	n.a.	75	Spherical	Pure
Upti-Clean	Silica Upti-prep	C18-S2F	High flow		Yes	60	500	140	Spherical	Pure
Upti-Clean	Silica Upti-prep	C18U-S2F	High flow		No	60	500	140	Spherical	Pure
Upti-Clean	Silica Upti-prep	C8-S	% C : 11		Yes	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	C8U-S	% C : 9		No	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	C8-S2F	High flow		Yes	60	500	140	Spherical	Pure
Upti-Clean	Silica Upti-prep	C2	% C : 6		Yes	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	PH-S	% C : 9		No	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	CH	% C : 10,5		No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	SI-S			No	60	500	50	Granular	Pure
Upti-Clean	Silica Upti-prep	NH2-S	% C : 5		No	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	CN-S	% C : 8		Yes	60	500	50	Spherical	Pure
Upti-Clean	Silica Upti-prep	OH	% C : 7,5		No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	SCX	Strong acid	0,7 meq/g	No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	WCX	Weak acid	0,22 meq/g	No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	DEAE	Weak base	0,33 meq/g	No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	SAX	Strong base	0,30 meq/g	No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	MM1	Mixed mode RP / SCX	0,09 meq/g	No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	MM2	Mixed mode RP / WCX	0,10 meq/g	No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	MM3	Mixed mode RP / SAX	0,14 meq/g	No	60	450	60	Granular	Pure
Upti-Clean	Silica Upti-prep	MM4	Mixed mode RP / WAX	0,15 meq/g	No	60	450	60	Granular	pure
Upti-Clean	Florisil	FL	Standard grade		No	n.a.	n.a.	200	Granular	Std.
Upti-Clean	Florisil	FLPR	Pesticide Residue grade		No	n.a.	n.a.	200	Granular	Std.
Upti-Clean	Polyamide	P6	6		No	n.a.	n.a.	100	Granular	Std.
Upti-Clean	Amberlite	XAD2	Polystyrene		No	90	330	16-50 mesh	Spherical	Std.
Upti-Clean	Amberlite	XAD4	Polystyrene		No	50	750	16-50 mesh	Spherical	Std.
Upti-Clean	Amberlite	XAD7	Acrylic Ester		No	80	450	16-50 mesh	Spherical	Std.
Upti-Clean	Amberlite	XAD16	Polystyrene		No	100	825	16-50 mesh	Spherical	Std.
Upti-Clean	Alumina	ALA	Acid		No	n.a.	200	32-63	Granular	Std.
Upti-Clean	Alumina	ALN	Neutral		No	n.a.	200	32-63	Granular	Std.
Upti-Clean	Alumina	ALB	Basic		No	n.a.	200	32-63	Granular	Std.
Upti-Clean	Silica	BCD	β-Cyclodextrine		No	n.a.	n.a.	40	n.a.	Std.
Upti-Clean	Carbon	CG	Graphitized		No	non-porous	100	n.a.	Granular	Std.
Upti-Clean	Carbon	CA	Activated		No	n.a.	n.a.	40	Granular	Std.

Sample Prep - Solid Phase Extraction

SPE format

Interchim has developed a comprehensive line of SPE products to support efficient and reproducible cleanup for a wide range of sample type and volume.

Our technological advances ensure our SPE range provide a margin of accuracy to within 1%. 96 well plates are delivered with a weighing certificate as a warranty of the real mass of sorbent within each well.

SPE format	Housing	Nature	Volume	Frits
Standard columns		Polypropylene MG	(1 - 3 - 6 - 15 -25 - 75 - 150) ml	(10 - 20 - 70) µm Polyethylene or Teflon
LRC columns		Polypropylene MG	Robotic Large Capacity (LRC) 15ml	20 µm Polyethylene or Teflon
Glass columns		Glass	6 ml	20 µm Teflon
Cartridges		Polypropylene MG	300 - 600 - 900 mg	20 µm Polyethylene
96 well plates		Polypropylene MG	2 ml square well	20 µm Polyethylene
48 well plates		Polypropylene MG	5 ml square well	20 µm Polyethylene

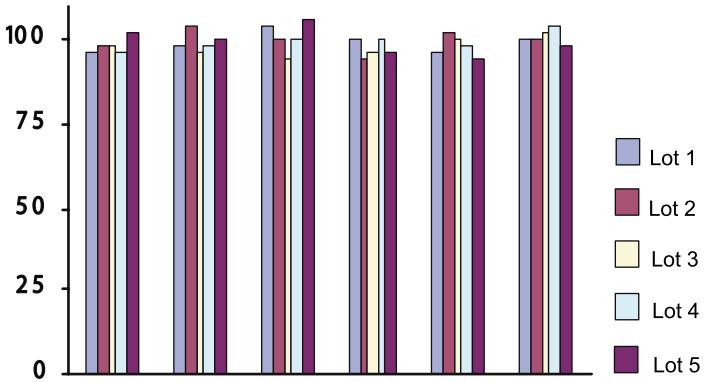
Upti-Clean™ - Silica based

Upti-Clean™ are Interchim's range of silica based SPE products. They have been developed from a spherical high purity (99.9%) silica called Upti-prep™. Upti-prep™ has strictly controlled porosity and particle size (+/- 10A, +/- 5 µm) working in a pH range of 1 to 7.5

Interchim bonding technology ensures greater batch to batch reproducibility for our bonded silica, there is no longer a requirement for batch reservations. Upti-Clean™ products subsequently achieve superior recovery rates relative to traditional irregular silicas, exhibiting excellent reproducibility & consistency

The Upti-Clean™ range achieves accuracy of +/- 1% in mass per column thanks to a strictly controlled packing process. Upti-Clean™ products are thoroughly quality control tested in-house to guarantee tracability. Products are supplied with an individual certificate detailing the specific production number and sorbent batch.

Upti-Clean™ are supplied in a variety of formats relative to current extraction apparatus and automated systems. Packaging has been specifically designed to guarantee the integrity of the product.



Lot to lot reproducibility

Upti-Clean™ cartridges

Upti-Clean™ cartridges are easy to use, efficient SPE cleaning devices with widespread applications throughout the pharmaceutical, toxicology and clinical fields

- Luer inlet & outlet fitting
- No specific SPE apparatus necessary
- Polypropylene MG housing

- C18, C8 bonded chemistries for non and mid-polar (aqueous) compounds
- Virgin silica for polar compound purification in non-polar solvents
- Useful for sample storage & transport

Weight	Qty	C18	C8	Silica
300 mg	25 u	C18-300/SC-25	C8-300/SC-25	SI-300/SC-25
300 mg	50 u	C18-300/SC-50	C8-300/SC-50	SI-300/SC-50
300 mg	100 u	C18-300/SC-100	C8-300/SC-100	SI-300/SC-100
600 mg	25 u	C18-600/SC-25	C8-600/SC-25	SI-600/SC-25
600 mg	50 u	C18-600/SC-50	C8-600/SC-50	SI-600/SC-50
600 mg	100 u	C18-600/SC-100	C8-600/SC-100	SI-600/SC-100
900 mg	25 u	C18-900/SC-25	C8-900/SC-25	SI-900/SC-25
900 mg	50 u	C18-900/SC-50	C8-900/SC-50	SI-900/SC-50
900 mg	100 u	C18-900/SC-100	C8-900/SC-100	SI-900/SC-100

Sample Prep - Solid Phase Extraction

Recovery™ - Silica based

Interchim Recovery™ columns address recovery and reproducibility problems, highlighted in recent studies, that are associated with only a part of the standard 60 Å silica's specific surface area being accessible in SPE silica based cleanup procedures.

Recovery™ columns utilise an optimised version of Upti-prep™ silica. They prevent physical phenomenons associated with older generation silica sorbent and utilise 100% of their specific surface area. Recovery™ can be used in all solvent conditions (including 100% water) achieving greater reproducibility and consistency.

- **Recovery™ REC** : C18, fully end-capped for non-polar, mid-polar & polar compounds in aqueous environment.
- **Recovery™ RSI** : Virgin silica for polar and mid-polar compounds from organic matrices.

Recovery™ columns

Weight	Volume	Qty	Recovery C18	Recovery Silica
Std. columns / PE frits				
50 mg	1 ml	50 u	**REC-50/1**	**RSI-50/1**
100 mg	1 ml	100 u	**REC-100/1**	**RSI-100/1**
100 mg	3 ml	50 u	**REC-100/3**	**RSI-100/3**
200 mg	3 ml	50 u	**REC-200/3**	**RSI-200/3**
500 mg	3 ml	50 u	**REC-500/3**	**RSI-500/3**
500 mg	6 ml	30 u	**REC-500/6**	**RSI-500/6**
1000 mg	6 ml	30 u	**REC-1G/6**	**RSI-1G/6**
2000 mg	6 ml	20 u	**REC-2G/6**	**RSI-2G/6**
2000 mg	15 ml	20 u	**REC-2G/15**	**RSI-2G/15**
2000 mg	25 ml	20 u	**REC-2G/25**	**RSI-2G/25**
LRC columns / PE frits				
100 mg	LRC 15	50 u	**REC-100LRC**	**RSI-100LRC**
200 mg	LRC 15	50 u	**REC-200LRC**	**RSI-200LRC**
500 mg	LRC 15	50 u	**REC-500LRC**	**RSI-500LRC**
Std. columns / PTFE frits				
50 mg	1 ml	50 u	**REC-50/1T**	**RSI-50/1T**
100 mg	1 ml	100 u	**REC-100/1T**	**RSI-100/1T**
100 mg	3 ml	50 u	**REC-100/3T**	**RSI-100/3T**
200 mg	3 ml	50 u	**REC-200/3T**	**RSI-200/3T**
500 mg	3 ml	50 u	**REC-500/3T**	**RSI-500/3T**
500 mg	6 ml	30 u	**REC-500/6T**	**RSI-500/6T**
1000 mg	6 ml	30 u	**REC-1G/6T**	**RSI-1G/6T**
Glass columns / PTFE frits				
200 mg	6 ml	30 u	**REC-200/6G**	**RSI-200/6G**
500 mg	6 ml	30 u	**REC-500/6G**	**RSI-500/6G**
1000 mg	6 ml	30 u	**REC-1G/6G**	**RSI-1G/6G**

Std. columns
PP straight tube + 20µm PE frits

LRC columns
PP tube + 20µm PE frits

Std. columns
PP tube + 20µm PTFE frits

Glass columns
Glass tube + 20µm PTFE frits

Glass tubes and PTFE frits are solvent resistant. These materials guarantee purifications without extractable.

Recovery™ 96 well plates

Automated cleanup procedures are now an integral part of the modern laboratory.

Interchim Recovery™ is available in a 96 well format with a 2 ml volume per well. This high quality unit provides rapid throughput of sample, within an automated process, whilst establishing excellent well-to-well consistency.

Recovery™ 96 well plates utilise Interchim's state of the art automated weight machine.
This packing technology guarantees unprecedented accuracy (+/- 1% mass per column) compared to the commonly utilised competitor volumetric systems. Recovery™ therefore raises the standards & client expectations for sample recovery /reproducibility.

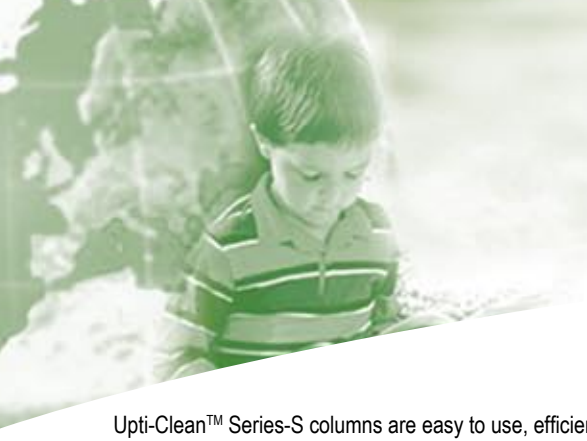
Recovery™ 96 well plates are QC tested in-house to guarantee tracability. Products are supplied with an individual certificate detailing Mfg number, Sorbent batch number & specifications. An additional certificate is supplied that states real sorbent mass in each individual well.

Recovery™ 96 well plates are packed in a PEHD/Al bag for long term integral storage. This prevents potential damage from UV and moisture.

Recovery™ 96 well plates are manufactured from polypropylene, conform to a standard footprint (127,76 mm x 85,47 mm x 19,74 mm) and are compatible with existing systems on the market.

Recovery® 96 Well plate - 2 ml

Weight	Qty	Recovery™ C18	Recovery™ Silica
30 mg	1 u	**REC-30/WP20**	**RSI-30/WP20**
50 mg	1 u	**REC-50/WP20**	**RSI-50/WP20**
60 mg	1 u	**REC-60/WP20**	**RSI-60/WP20**
100 mg	1 u	**REC-100/WP20**	**RSI-100/WP20**
150 mg	1 u	**REC-150/WP20**	**RSI-150/WP20**
200 mg	1 u	**REC-200/WP20**	**RSI-200/WP20**



Sample Prep - Solid Phase Extraction

Upti-Clean™ Series-S - Silica based

Upti-Clean™ Series-S columns are easy to use, efficient SPE cleaning devices with widespread applications throughout the pharmaceutical, toxicology and clinical fields.

- 30 selectivities available
- Polypropylene MG or Glass housing
- Std. PE or PTFE frits
- Luer outlet fitting

Upti-Clean™ Series-S, columns

Hydrophobic bonding

Weight	Volume	Qty	C18-S	C18U-S	LCC	RPAQ	C8-S	C8U-S	C2	PH-S
Std. columns / PE frits										
50 mg	1 ml	50 u	C18-S-50/1	C18U-S-50/1	LCC-50/1	RPAQ-50/1	C8-S-50/1	C8U-S-50/1	C2-50/1	PH-S-50/1
100 mg	1 ml	100 u	C18-S-100/1	C18U-S-100/1	LCC-100/1	RPAQ-100/1	C8-S-100/1	C8U-S-100/1	C2-100/1	PH-S-100/1
100 mg	3 ml	50 u	C18-S-100/3	C18U-S-100/3	LCC-100/3	RPAQ-100/3	C8-S-100/3	C8U-S-100/3	C2-100/3	PH-S-100/3
200 mg	3 ml	50 u	C18-S-200/3	C18U-S-200/3	LCC-200/3	RPAQ-200/3	C8-S-200/3	C8U-S-200/3	C2-200/3	PH-S-200/3
500 mg	3 ml	50 u	C18-S-500/3	C18U-S-500/3	LCC-500/3	RPAQ-500/3	C8-S-500/3	C8U-S-500/3	C2-500/3	PH-S-500/3
500 mg	6 ml	30 u	C18-S-500/6	C18U-S-500/6	LCC-500/6	RPAQ-500/6	C8-S-500/6	C8U-S-500/6	C2-500/6	PH-S-500/6
1000 mg	6 ml	30 u	C18-S-1G/6	C18U-S-1G/6	LCC-1G/6	RPAQ-1G/6	C8-S-1G/6	C8U-S-1G/6	C2-1G/6	PH-S-1G/6
2000 mg	6 ml	20 u	C18-S-2G/6	C18U-S-2G/6	LCC-2G/6	RPAQ-2G/6	C8-S-2G/6	C8U-S-2G/6	C2-2G/6	PH-S-2G/6
2000 mg	15 ml	20 u	C18-S-2G/15	C18U-S-2G/15	LCC-2G/15	RPAQ-2G/15	C8-S-2G/15	C8U-S-2G/15	C2-2G/15	PH-S-2G/15
2000 mg	25 ml	20 u	C18-S-2G/25	C18U-S-2G/25	LCC-2G/25	RPAQ-2G/25	C8-S-2G/25	C8U-S-2G/25	C2-2G/25	PH-S-2G/25
LRC columns / PE frits										
100 mg	LRC 15	50 u	C18-S-100LRC	C18U-S-100LRC	LCC-100LRC	RPAQ-100LRC	C8-S-100LRC	C8U-S-100LRC	C2-100LRC	PH-S-100LRC
200 mg	LRC 15	50 u	C18-S-200LRC	C18U-S-200LRC	LCC-200LRC	RPAQ-200LRC	C8-S-200LRC	C8U-S-200LRC	C2-200LRC	PH-S-200LRC
500 mg	LRC 15	50 u	C18-S-500LRC	C18U-S-500LRC	LCC-500LRC	RPAQ-500LRC	C8-S-500LRC	C8U-S-500LRC	C2-500LRC	PH-S-500LRC
Std. columns / PTFE frits										
50 mg	1 ml	50 u	C18-S-50/1T	C18U-S-50/1T	LCC-50/1T	RPAQ-50/1T	C8-S-50/1T	C8U-S-50/1T	C2-50/1T	PH-S-50/1T
100 mg	1 ml	100 u	C18-S-100/1T	C18U-S-100/1T	LCC-100/1T	RPAQ-100/1T	C8-S-100/1T	C8U-S-100/1T	C2-100/1T	PH-S-100/1T
100 mg	3 ml	50 u	C18-S-100/3T	C18U-S-100/3T	LCC-100/3T	RPAQ-100/3T	C8-S-100/3T	C8U-S-100/3T	C2-100/3T	PH-S-100/3T
200 mg	3 ml	50 u	C18-S-200/3T	C18U-S-200/3T	LCC-200/3T	RPAQ-200/3T	C8-S-200/3T	C8U-S-200/3T	C2-200/3T	PH-S-200/3T
500 mg	3 ml	50 u	C18-S-500/3T	C18U-S-500/3T	LCC-500/3T	RPAQ-500/3T	C8-S-500/3T	C8U-S-500/3T	C2-500/3T	PH-S-500/3T
500 mg	6 ml	30 u	C18-S-500/6T	C18U-S-500/6T	LCC-500/6T	RPAQ-500/6T	C8-S-500/6T	C8U-S-500/6T	C2-500/6T	PH-S-500/6T
1000 mg	6 ml	30 u	C18-S-1G/6T	C18U-S-1G/6T	LCC-1G/6T	RPAQ-1G/6T	C8-S-1G/6T	C8U-S-1G/6T	C2-1G/6T	PH-S-1G/6T
Glass columns / PTFE frits										
200 mg	6 ml	30 u	C18-S-200/6G	C18U-S-200/6G	LCC-200/6G	RPAQ-200/6G	C8-S-200/6G	C8U-S-200/6G	C2-200/6G	PH-S-200/6G
500 mg	6 ml	30 u	C18-S-500/6G	C18U-S-500/6G	LCC-500/6G	RPAQ-500/6G	C8-S-500/6G	C8U-S-500/6G	C2-500/6G	PH-S-500/6G
1000 mg	6 ml	30 u	C18-S-1G/6G	C18U-S-1G/6G	LCC-1G/6G	RPAQ-1G/6G	C8-S-1G/6G	C8U-S-1G/6G	C2-1G/6G	PH-S-1G/6G

Upti-Clean™ Series-S - Silica based

Upti-Clean™ Series-S 96 well plates

Automated cleanup procedures are now an integral part of the modern laboratory.

Interchim Upti-Clean™ is available in a 96 well format with a 2 ml volume per well. This high quality unit provides rapid throughput of sample, within an automated process, whilst establishing excellent well-to-well consistency.

Upti-Clean™ 96 well plates utilise Interchim's state of the art automated weight machine. This packing technology guarantees unprecedented accuracy (+/- 1% mass per column) compared to the commonly utilised competitor volumetric systems. Upti-Clean™ therefore raises the standards & client expectations for sample recovery /reproducibility.

Upti-Clean™ 96 well plates are QC tested in-house to guarantee tracability. Products are supplied with an individual certificate detailing Mfg number, Sorbent batch number & specifications. An additional certificate is supplied that states real sorbent mass in each individual well.

Upti-Clean™ 96 well plates are packed in a PEHD/Al bag for long term integral storage. This prevents potential damage from UV and moisture.

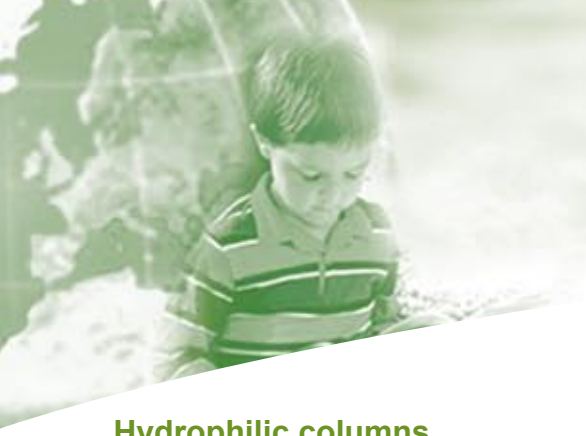
Upti-Clean™ 96 well plates are manufactured from polypropylene, conform to a standard footprint (127,76 mm x 85,47 mm x 19,74 mm) and are compatible with existing systems on the market.

Upti-Clean™ Series-S, 96 well plates - 2 ml

Hydrophobic bonding

Weight	Qty	C18-S	C18U-S	LCC	RPAQ	C8-S
30 mg	1 u	C18-30/WP20	C18U-30/WP20	LCC-30/WP20	RPAQ-30/WP20	C8-30/WP20
50 mg	1 u	C18-50/WP20	C18U-50/WP20	LCC-50/WP20	RPAQ-50/WP20	C8-50/WP20
60 mg	1 u	C18-60/WP20	C18U-60/WP20	LCC-60/WP20	RPAQ-60/WP20	C8-60/WP20
100 mg	1 u	C18-100/WP20	C18U-100/WP20	LCC-100/WP20	RPAQ-100/WP20	C8-100/WP20
150 mg	1 u	C18-150/WP20	C18U-150/WP20	LCC-150/WP20	RPAQ-150/WP20	C8-150/WP20
200 mg	1 u	C18-200/WP20	C18U-200/WP20	LCC-200/WP20	RPAQ-200/WP20	C8-200/WP20

		C8U-S	C2	PH-S	CH
30 mg	1 u	C8U-30/WP20	C2-30/WP20	PH-30/WP20	CH-30/WP20
50 mg	1 u	C8U-50/WP20	C2-50/WP20	PH-50/WP20	CH-50/WP20
60 mg	1 u	C8U-60/WP20	C2-60/WP20	PH-60/WP20	CH-60/WP20
100 mg	1 u	C8U-100/WP20	C2-100/WP20	PH-100/WP20	CH-100/WP20
150 mg	1 u	C8U-150/WP20	C2-150/WP20	PH-150/WP20	CH-150/WP20
200 mg	1 u	C8U-200/WP20	C2-200/WP20	PH-200/WP20	CH-200/WP20



Sample Prep - Solid Phase Extraction

Upti-Clean™ Series-S - Silica based

Hydrophilic columns

Weight	Volume	Qty	SI-S	NH2-S	CN-S	OH
Std. columns / PE frits						
50 mg	1 ml	50 u	SI-S-50/1	NH2-S-50/1	CN-S-50/1	OH-50/1
100 mg	1 ml	100 u	SI-S-100/1	NH2-S-100/1	CN-S-100/1	OH-100/1
100 mg	3 ml	50 u	SI-S-100/3	NH2-S-100/3	CN-S-100/3	OH-100/3
200 mg	3 ml	50 u	SI-S-200/3	NH2-S-200/3	CN-S-200/3	OH-200/3
500 mg	3 ml	50 u	SI-S-500/3	NH2-S-500/3	CN-S-500/3	OH-500/3
500 mg	6 ml	30 u	SI-S-500/6	NH2-S-500/6	CN-S-500/6	OH-500/6
1000 mg	6 ml	30 u	SI-S-1G/6	NH2-S-1G/6	CN-S-1G/6	OH-1G/6
2000 mg	6 ml	20 u	SI-S-2G/6	NH2-S-2G/6	CN-S-2G/6	OH-2G/6
2000 mg	15 ml	20 u	SI-S-2G/15	NH2-S-2G/15	CN-S-2G/15	OH-2G/15
2000 mg	25 ml	20 u	SI-S-2G/25	NH2-S-2G/25	CN-S-2G/25	OH-2G/25
LRC columns / PE frits						
100 mg	LRC 15	50 u	SI-S-100LRC	NH2-S-100LRC	CN-S-100LRC	OH-100LRC
200 mg	LRC 15	50 u	SI-S-200LRC	NH2-S-200LRC	CN-S-200LRC	OH-200LRC
500 mg	LRC 15	50 u	SI-S-500LRC	NH2-S-500LRC	CN-S-500LRC	OH-500LRC
Std. columns / PTFE frits						
50 mg	1 ml	50 u	SI-S-50/1T	NH2-S-50/1T	CN-S-50/1T	OH-50/1T
100 mg	1 ml	100 u	SI-S-100/1T	NH2-S-100/1T	CN-S-100/1T	OH-100/1T
100 mg	3 ml	50 u	SI-S-100/3T	NH2-S-100/3T	CN-S-100/3T	OH-100/3T
200 mg	3 ml	50 u	SI-S-200/3T	NH2-S-200/3T	CN-S-200/3T	OH-200/3T
500 mg	3 ml	50 u	SI-S-500/3T	NH2-S-500/3T	CN-S-500/3T	OH-500/3T
500 mg	6 ml	30 u	SI-S-500/6T	NH2-S-500/6T	CN-S-500/6T	OH-500/6T
1000 mg	6 ml	30 u	SI-S-1G/6T	NH2-S-1G/6T	CN-S-1G/6T	OH-1G/6T
Glass columns / PTFE frits						
200 mg	6 ml	30 u	SI-S-200/6G	NH2-S-200/6G	CN-S-200/6G	OH-200/6G
500 mg	6 ml	30 u	SI-S-500/6G	NH2-S-500/6G	CN-S-500/6G	OH-500/6G
1000 mg	6 ml	30 u	SI-S-1G/6G	NH2-S-1G/6G	CN-S-1G/6G	OH-1G/6G

Ion exchange columns

Weight	Volume	Qty	SCX	WCX	DEAE	SAX
Std. columns / PE frits						
50 mg	1 ml	50 u	SCX-50/1	WCX-50/1	DEAE-50/1	SAX-50/1
100 mg	1 ml	100 u	SCX-100/1	WCX-100/1	DEAE-100/1	SAX-100/1
100 mg	3 ml	50 u	SCX-100/3	WCX-100/3	DEAE-100/3	SAX-100/3
200 mg	3 ml	50 u	SCX-200/3	WCX-200/3	DEAE-200/3	SAX-200/3
500 mg	3 ml	50 u	SCX-500/3	WCX-500/3	DEAE-500/3	SAX-500/3
500 mg	6 ml	30 u	SCX-500/6	WCX-500/6	DEAE-500/6	SAX-500/6
1000 mg	6 ml	30 u	SCX-1G/6	WCX-1G/6	DEAE-1G/6	SAX-1G/6
2000 mg	6 ml	20 u	SCX-2G/6	WCX-2G/6	DEAE-2G/6	SAX-2G/6
2000 mg	15 ml	20 u	SCX-2G/15	WCX-2G/15	DEAE-2G/15	SAX-2G/15
2000 mg	25 ml	20 u	SCX-2G/25	WCX-2G/25	DEAE-2G/25	SAX-2G/25
LRC columns / PE frits						
100 mg	LRC 15	50 u	SCX-100LRC	WCX-100LRC	DEAE-100LRC	SAX-100LRC
200 mg	LRC 15	50 u	SCX-200LRC	WCX-200LRC	DEAE-200LRC	SAX-200LRC
500 mg	LRC 15	50 u	SCX-500LRC	WCX-500LRC	DEAE-500LRC	SAX-500LRC
Std. columns / PTFE frits						
50 mg	1 ml	50 u	SCX-50/1T	WCX-50/1T	DEAE-50/1T	SAX-50/1T
100 mg	1 ml	100 u	SCX-100/1T	WCX-100/1T	DEAE-100/1T	SAX-100/1T
100 mg	3 ml	50 u	SCX-100/3T	WCX-100/3T	DEAE-100/3T	SAX-100/3T
200 mg	3 ml	50 u	SCX-200/3T	WCX-200/3T	DEAE-200/3T	SAX-200/3T
500 mg	3 ml	50 u	SCX-500/3T	WCX-500/3T	DEAE-500/3T	SAX-500/3T
500 mg	6 ml	30 u	SCX-500/6T	WCX-500/6T	DEAE-500/6T	SAX-500/6T
1000 mg	6 ml	30 u	SCX-1G/6T	WCX-1G/6T	DEAE-1G/6T	SAX-1G/6T
Glass columns / PTFE frits						
200 mg	6 ml	30 u	SCX-200/6G	WCX-200/6G	DEAE-200/6G	SAX-200/6G
500 mg	6 ml	30 u	SCX-500/6G	WCX-500/6G	DEAE-500/6G	SAX-500/6G
1000 mg	6 ml	30 u	SCX-1G/6G	WCX-1G/6G	DEAE-1G/6G	SAX-1G/6G

Hydrophilic 96 well plates - 2 ml

Weight	Qty	SI-S	NH2-S	CN-S	OH
30 mg	1 u	SI-30/WP20	NH2-30/WP20	CN-30/WP20	OH-30/WP20
50 mg	1 u	SI-50/WP20	NH2-50/WP20	CN-50/WP20	OH-50/WP20
60 mg	1 u	SI-60/WP20	NH2-60/WP20	CN-60/WP20	OH-60/WP20
100 mg	1 u	SI-100/WP20	NH2-100/WP20	CN-100/WP20	OH-100/WP20
150 mg	1 u	SI-150/WP20	NH2-150/WP20	CN-150/WP20	OH-150/WP20
200 mg	1 u	SI-200/WP20	NH2-200/WP20	CN-200/WP20	OH-200/WP20

Ion exchange :es - 2 ml

Weight	Qty	SCX	WCX	DEAE	SAX
30 mg	1 u	SCX-30/WP20	WCX-30/WP20	DEAE-30/WP20	SAX-30/WP20
50 mg	1 u	SCX-50/WP20	WCX-50/WP20	DEAE-50/WP20	SAX-50/WP20
60 mg	1 u	SCX-60/WP20	WCX-60/WP20	DEAE-60/WP20	SAX-60/WP20
100 mg	1 u	SCX-100/WP20	WCX-100/WP20	DEAE-100/WP20	SAX-100/WP20
150 mg	1 u	SCX-150/WP20	WCX-150/WP20	DEAE-150/WP20	SAX-150/WP20
200 mg	1 u	SCX-200/WP20	WCX-200/WP20	DEAE-200/WP20	SAX-200/WP20

Upti-Clean™ Series-S - Silica based

Mixed mode columns

Weight	Volume	Qty	MM1	MM2	MM3	MM4
Std. columns / PE frits						
50 mg	1 ml	50 u	**MM1-50/1**	**MM2-50/1**	**MM3-50/1**	**MM4-50/1**
100 mg	1 ml	100 u	**MM1-100/1**	**MM2-100/1**	**MM3-100/1**	**MM4-100/1**
100 mg	3 ml	50 u	**MM1-100/3**	**MM2-100/3**	**MM3-100/3**	**MM4-100/3**
200 mg	3 ml	50 u	**MM1-200/3**	**MM2-200/3**	**MM3-200/3**	**MM4-200/3**
500 mg	3 ml	50 u	**MM1-500/3**	**MM2-500/3**	**MM3-500/3**	**MM4-500/3**
500 mg	6 ml	30 u	**MM1-500/6**	**MM2-500/6**	**MM3-500/6**	**MM4-500/6**
1000 mg	6 ml	30 u	**MM1-1G/6**	**MM2-1G/6**	**MM3-1G/6**	**MM4-1G/6**
2000 mg	6 ml	20 u	**MM1-2G/6**	**MM2-2G/6**	**MM3-2G/6**	**MM4-2G/6**
2000 mg	15 ml	20 u	**MM1-2G/15**	**MM2-2G/15**	**MM3-2G/15**	**MM4-2G/15**
2000 mg	25 ml	20 u	**MM1-2G/25**	**MM2-2G/25**	**MM3-2G/25**	**MM4-2G/25**
LRC columns / PE frits						
100 mg	LRC 15	50 u	**MM1-100LRC**	**MM2-100LRC**	**MM3-100LRC**	**MM4-100LRC**
200 mg	LRC 15	50 u	**MM1-200LRC**	**MM2-200LRC**	**MM3-200LRC**	**MM4-200LRC**
500 mg	LRC 15	50 u	**MM1-500LRC**	**MM2-500LRC**	**MM3-500LRC**	**MM4-500LRC**
Std. columns / PTFE frits						
50 mg	1 ml	50 u	**MM1-50/1T**	**MM2-50/1T**	**MM3-50/1T**	**MM4-50/1T**
100 mg	1 ml	100 u	**MM1-100/1T**	**MM2-100/1T**	**MM3-100/1T**	**MM4-100/1T**
100 mg	3 ml	50 u	**MM1-100/3T**	**MM2-100/3T**	**MM3-100/3T**	**MM4-100/3T**
200 mg	3 ml	50 u	**MM1-200/3T**	**MM2-200/3T**	**MM3-200/3T**	**MM4-200/3T**
500 mg	3 ml	50 u	**MM1-500/3T**	**MM2-500/3T**	**MM3-500/3T**	**MM4-500/3T**
500 mg	6 ml	30 u	**MM1-500/6T**	**MM2-500/6T**	**MM3-500/6T**	**MM4-500/6T**
1000 mg	6 ml	30 u	**MM1-1G/6T**	**MM2-1G/6T**	**MM3-1G/6T**	**MM4-1G/6T**
Glass columns - PTFE frits						
200 mg	6 ml	30 u	**MM1-200/6G**	**MM2-200/6G**	**MM3-200/6G**	**MM4-200/6G**
500 mg	6 ml	30 u	**MM1-500/6G**	**MM2-500/6G**	**MM3-500/6G**	**MM4-500/6G**
1000 mg	6 ml	30 u	**MM1-1G/6G**	**MM2-1G/6G**	**MM3-1G/6G**	**MM4-1G/6G**

Std. columns
PP straight tube + 20µm PE frits

LRC columns
PP tube + 20µm PE frits

Std. columns
PP straight tube + 20µm PTFE frits

Glass columns
Glass tube + 20µm PTFE frits

Mixed mode 96 well plates - 2 ml

Weight	Qty	MM1	MM2	MM3	MM4
30 mg	1 u	**MM1-30/WP20**	**MM2-30/WP20**	**MM3-30/WP20**	**MM4-30/WP20**
50 mg	1 u	**MM1-50/WP20**	**MM2-50/WP20**	**MM3-50/WP20**	**MM4-50/WP20**
60 mg	1 u	**MM1-60/WP20**	**MM2-60/WP20**	**MM3-60/WP20**	**MM4-60/WP20**
100 mg	1 u	**MM1-100/WP20**	**MM2-100/WP20**	**MM3-100/WP20**	**MM4-100/WP20**
150 mg	1 u	**MM1-150/WP20**	**MM2-150/WP20**	**MM3-150/WP20**	**MM4-150/WP20**
200 mg	1 u	**MM1-200/WP20**	**MM2-200/WP20**	**MM3-200/WP20**	**MM4-200/WP20**

Sample Prep - Solid Phase Extraction

Upti-Clean™ Series-S2F - Silica based

Upti-Clean™ Series-S2F columns are easy to use, efficient SPE cleaning devices. 140 µm particle size achieves faster flow and helps to achieve non-polar and mid-polar compound extraction from crude matrices without clogging.

- 3 selectivities available
- Polypropylene MG or Glass housing
- Std. PE or PTFE frits
- Luer outlet fitting

Applications : urines, plasmas, oils…

Upti-Clean™ Series-S2F, columns

Weight	Volume	Qty	C18-S2F	C18U-S2F	C8-S2F
Std. columns / PE frits					
50 mg	1 ml	50 u	**C18-S2F-50/1**	**C18U-S2F-50/1**	**C8-S2F-50/1**
100 mg	1 ml	100 u	**C18-S2F-100/1**	**C18U-S2F-100/1**	**C8-S2F-100/1**
100 mg	3 ml	50 u	**C18-S2F-100/3**	**C18U-S2F-100/3**	**C8-S2F-100/3**
200 mg	3 ml	50 u	**C18-S2F-200/3**	**C18U-S2F-200/3**	**C8-S2F-200/3**
500 mg	3 ml	50 u	**C18-S2F-500/3**	**C18U-S2F-500/3**	**C8-S2F-500/3**
500 mg	6 ml	30 u	**C18-S2F-500/6**	**C18U-S2F-500/6**	**C8-S2F-500/6**
1000 mg	6 ml	30 u	**C18-S2F-1G/6**	**C18U-S2F-1G/6**	**C8-S2F-1G/6**
2000 mg	6 ml	20 u	**C18-S2F-2G/6**	**C18U-S2F-2G/6**	**C8-S2F-2G/6**
2000 mg	15 ml	20 u	**C18-S2F-2G/15**	**C18U-S2F-2G/15**	**C8-S2F-2G/15**
2000 mg	25 ml	20 u	**C18-S2F-2G/25**	**C18U-S2F-2G/25**	**C8-S2F-2G/25**
LRC columns / PE frits					
100 mg	LRC 15	50 u	**C18-S2F-100LRC**	**C18U-S2F-100LRC**	**C8-S2F-100LRC**
200 mg	LRC 15	50 u	**C18-S2F-200LRC**	**C18U-S2F-200LRC**	**C8-S2F-200LRC**
500 mg	LRC 15	50 u	**C18-S2F-500LRC**	**C18U-S2F-500LRC**	**C8-S2F-500LRC**
Std. columns / PTFE frits					
50 mg	1 ml	50 u	**C18-S2F-50/1T**	**C18U-S2F-50/1T**	**C8-S2F-50/1T**
100 mg	1 ml	100 u	**C18-S2F-100/1T**	**C18U-S2F-100/1T**	**C8-S2F-100/1T**
100 mg	3 ml	50 u	**C18-S2F-100/3T**	**C18U-S2F-100/3T**	**C8-S2F-100/3T**
200 mg	3 ml	50 u	**C18-S2F-200/3T**	**C18U-S2F-200/3T**	**C8-S2F-200/3T**
500 mg	3 ml	50 u	**C18-S2F-500/3T**	**C18U-S2F-500/3T**	**C8-S2F-500/3T**
500 mg	6 ml	30 u	**C18-S2F-500/6T**	**C18U-S2F-500/6T**	**C8-S2F-500/6T**
1000 mg	6 ml	30 u	**C18-S2F-1G/6T**	**C18U-S2F-1G/6T**	**C8-S2F-1G/6T**
Glass columns / PTFE frits					
200 mg	6 ml	30 u	**C18-S2F-200/6G**	**C18U-S2F-200/6G**	**C8-S2F-200/6G**
500 mg	6 ml	30 u	**C18-S2F-500/6G**	**C18U-S2F-500/6G**	**C8-S2F-500/6G**
1000 mg	6 ml	30 u	**C18-S2F-1G/6G**	**C18U-S2F-1G/6G**	**C8-S2F-1G/6G**

Std. columns
PP straight tube + 20µm PE frits

LRC columns
PP tube + 20µm PE frits

Std. columns
PP straight tube + 20µm PTFE frits

Glass columns
Glass tube + 20µm PTFE frits

Upti-Clean™ Specialty

The Upti-Clean™ Specialty Series columns complete the Series S range. The Specialty series are designed for specific applications highlighted below.

- Polypropylene MG housing
- Std. PE or PTFE frits
- Luer outlet fitting

Florisil® columns

Florisil is a magnesia-loaded silica gel used to trap polar impurities within non-polar matrices. Florisil can also be used as an alternative to traditional virgin silica when working with viscous solvents.
Florisil PR is a grade for Pesticide applications

Weight	Volume	Qty	FL	FLPR
Std. columns / PE frits				
500 mg	3 ml	50 u	**FL-500/3**	**FLPR-500/3**
500 mg	6 ml	30 u	**FL-500/6**	**FLPR-500/6**
1000 mg	6 ml	30 u	**FL-1G/6**	**FLPR-1G/6**
2000 mg	6 ml	20 u	**FL-2G/6**	**FLPR-2G/6**
2000 mg	15 ml	20 u	**FL-2G/15**	**FLPR-2G/15**
2000 mg	25 ml	20 u	**FL-2G/25**	**FLPR-2G/25**
Std. columns / PTFE frits				
500 mg	3 ml	50 u	**FL-500/3T**	**FLPR-500/3T**
500 mg	6 ml	30 u	**FL-500/6T**	**FLPR-500/6T**
1000 mg	6 ml	30 u	**FL-1G/6T**	**FLPR-1G/6T**

Alumina columns

The aluminium atom lacks two electrons within its center that are responsible for ion pair interaction.
The acidic treatment of Alumina favors the retention of cationic species whilst a basic treatment of Alumina leads to the retention of anionic species.
Neutral Alumina is suitable to clean non ionisable compounds with polar function.

Applications : Environmental (dioxines, PCB,..)

Weight	Volume	Qty	ALA	ALB	ALN
Std. columns / PE frits					
500 mg	3 ml	50 u	**ALA-500/3**	**ALB-500/3**	**ALN-500/3**
500 mg	6 ml	30 u	**ALA-500/6**	**ALB-500/6**	**ALN-500/6**
1000 mg	6 ml	30 u	**ALA-1G/6**	**ALB-1G/6**	**ALN-1G/6**
2000 mg	6 ml	20 u	**ALA-2G/6**	**ALB-2G/6**	**ALN-2G/6**
2000 mg	15 ml	20 u	**ALA-2G/15**	**ALB-2G/15**	**ALN-2G/15**
2000 mg	25 ml	20 u	**ALA-2G/25**	**ALB-2G/25**	**ALN-2G/25**
Std. columns / PTFE frits					
500 mg	3 ml	50 u	**ALA-500/3T**	**ALB-500/3T**	**ALN-500/3T**
500 mg	6 ml	30 u	**ALA-500/6T**	**ALB-500/6T**	**ALN-500/6T**
1000 mg	6 ml	30 u	**ALA-1G/6T**	**ALB-1G/6T**	**ALN-1G/6T**

Upti-Clean™ DRY columns

These columns remove trace water found in organic solvents or non aqueous samples. They contain a treated, high purity sodium sufate group within the structure.

Description	Weight	Volume	Qty	P/N
Upti-Clean DRY	300 mg	1 ml	50 u	**DRY-300/1**
Upti-Clean DRY	500 mg	3 ml	50 u	**DRY-500/3**
Upti-Clean DRY	2000 mg	3 ml	50 u	**DRY-2G/3**

Amberlite™ columns

Amberlite® is the first generation of polymer resins. They are used for fast separation of a variety of compounds from biological fluids. Amberlite® suffer from weak selectivity.

Weight	Volume	Qty	XAD-2	XAD-4	XAD-7	XAD-16
Std. columns / PE frits						
100 mg	1 ml	100 u	**XAD2-100/1**	**XAD4-100/1**	**XAD7-100/1**	**XAD16-100/1**
200 mg	3 ml	50 u	**XAD2-200/3**	**XAD4-200/3**	**XAD7-200/3**	**XAD16-200/3**
500 mg	3 ml	50 u	**XAD2-500/3**	**XAD4-500/3**	**XAD7-500/3**	**XAD16-500/3**
500 mg	6 ml	30 u	**XAD2-500/6**	**XAD4-500/6**	**XAD7-500/6**	**XAD16-500/6**
1000 mg	6 ml	30 u	**XAD2-1G/6**	**XAD4-1G/6**	**XAD7-1G/6**	**XAD16-1G/6**
1000 mg	12 ml	20 u	**XAD2-1G/12**	**XAD4-1G/12**	**XAD7-1G/12**	**XAD16-1G/12**
2000 mg	6 ml	30 u	**XAD2-2G/6**	**XAD4-2G/6**	**XAD7-2G/6**	**XAD16-2G/6**
2000 mg	12 ml	20 u	**XAD2-2G/12**	**XAD4-2G/12**	**XAD7-2G/12**	**XAD16-2G/12**
5000 mg	35 ml	20 u	**XAD2-5G/35**	**XAD4-5G/35**	**XAD7-5G/35**	**XAD16-5G/35**
10000 mg	60 ml	12 u	**XAD2-10G/60**	**XAD4-10G/60**	**XAD7-10G/60**	**XAD16-10G/60**
20000 mg	60 ml	12 u	**XAD2-20G/60**	**XAD4-20G/60**	**XAD7-20G/60**	**XAD16-20G/60**

Polyamide columns

Amide functionality upon a Nylon support. Polyamide columns are typically used for aromatic and natural compound extraction such as PAH or flavanoids

Weight	Volume	Qty	P6
Std. columns / PE frits			
100 mg	1 ml	100 u	**P6-100/1**
100 mg	3 ml	50 u	**P6-100/3**
200 mg	3 ml	50 u	**P6-200/3**
500 mg	3 ml	50 u	**P6-500/3**
500 mg	6 ml	30 u	**P6-500/6**
1000 mg	6 ml	30 u	**P6-1G/6**
2000 mg	6 ml	20 u	**P6-2G/6**
2000 mg	15 ml	20 u	**P6-2G/15**
2000 mg	25 ml	20 u	**P6-2G/25**

β-Cyclodextrine columns

β-Cyclodextrine is useful for cleaning small molecular mass oligosaccharides.

Weight	Volume	Qty	BCD
Std. columns / PE frits			
100 mg	1 ml	100 u	**B-CD-100/1**
100 mg	3 ml	50 u	**B-CD-100/3**
200 mg	3 ml	50 u	**B-CD-200/3**
500 mg	3 ml	50 u	**B-CD-500/3**
500 mg	6 ml	30 u	**B-CD-500/6**
1000 mg	6 ml	30 u	**B-CD-1G/6**

Graphitized carbon columns

The electronic interactions of graphitized carbon assure the retention of a large variety of compounds.This sorbent is especially suited to polar compound extraction within an aqueous matrix.

Weight	Volume	Qty	CG-ENV	CG
Std. columns / PE frits				
50 mg	1 ml	100 u	**CG-ENV-50/1**	**CG-50/1**
100 mg	1 ml	100 u	**CG-ENV-100/1**	**CG-100/1**
150 mg	3 ml	50 u		**CG-150/3**
200 mg	3 ml	50 u	**CG-ENV-200/3**	**CG-200/3**
250 mg	3 ml	50 u		**CG-250/3**
250 mg	6 ml	30 u		**CG-250/6**
500 mg	3 ml	50 u	**CG-ENV-500/3**	**CG-500/3**
500 mg	6 ml	30 u	**CG-ENV-500/6**	**CG-500/6**
1000 mg	6 ml	-	**CG-ENV-1G/6**	**CG-1G/6**
1000 mg	15 ml	20 u	**CG-ENV-1G/15**	**CG-1G/1**

Florisil & Alumina 96 well plate

Weight	Qty	FL	FLPR	ALA	ALB	ALN
50 mg	1 u	**FL-50/WP20**	**FLPR-50/WP20**	**ALA-50/WP20**	**ALB-50/WP20**	**ALN-50/WP20**
100 mg	1 u	**FL-100/WP20**	**FLPR-100/WP20**	**ALA-100/WP20**	**ALB-100/WP20**	**ALN-100/WP20**
150 mg	1 u	**FL-150/WP20**	**FLPR-150/WP20**	**ALA-150/WP20**	**ALB-150/WP20**	**ALN-150/WP20**

Sample Prep - Solid Phase Extraction

Upti-Clean™ 48 well plates

The Upti-Clean® 48 well-plate is a flash purification device for chemists working in Drug Discovery Laboratories and Medicinal Chemistry Departments.
The 48 well format maximises sample purification throughput and is an essential tool for library purification.The large volume wells (5 & 7 ml) allow high sample volume load.

Interchim silica and bonded silica are rigid supports that do not shrink or swell with solvents. The pH stability of bonded silica is limited, typically to within the range of 2 to 7.5. This is dependant on the chemisty and Interchim offers 8 different selectivities in this format. Our sorbents take advantage of our ultra pure spherical silca (Upti-prep™), and this achieves greater purification, and establishes optimized sample recovery.

Upti-Clean™ 48 well plates utilise Interchim's state of the art automated weight machine. This packing technology guarantees unprecedented accuracy (+/- 1% mass per column) compared to the commonly utilised competitor volumetric systems. Upti-Clean™ therefore raise the standards & client expectations for sample recovery /reproducibility.

Upti-Clean™ 48 well plates are QC tested in-house to guarantee tracability. Products are supplied with an individual certificate detailing Mfg number, Sorbent batch number & specifications. An additional certificate is supplied that states real sorbent mass in each individual well.

Upti-Clean™ 48 well plates are packed in a PEHD/Al bag for long term integral storage. This prevents potential damage from UV and moisture.

Upti-Clean® 48 well plates are manufactured from polypropylene MG, conform to a standard footprint (127,76 mm x 85,47 mm) and are compatible with existing systems on the market.

Sorbent	Mass / well 100 mg / 5 ml	Mass / well 250 mg / 5 ml	Mass / well 500 mg / 7 ml	Mass / well 1000 mg / 7 ml
Silica	**SI-100/WP50**	**SI-250/WP50**	**SI-500/WP70**	**SI-1G/WP70**
C18	**C18-100/WP50**	**C18-250/WP50**	**C18-500/WP70**	**C18-1G/WP70**
Penyl	**PH-100/WP50**	**PH-250/WP50**	**PH-500/WP70**	**PH-1G/WP70**
Amino	**NH2-100/WP50**	**NH2-250/WP50**	**NH2-500/WP70**	**NH2-1G/WP70**
Strong Anion Exchanger	**SAX-100/WP50**	**SAX-250/WP50**	**SAX-500/WP70**	**SAX-1G/WP70**
Strong Canion Exchanger	**SCX-100/WP50**	**SCX-250/WP50**	**SCX-500/WP70**	**SCX-1G/WP70**
Alumina basic	**ALB-100/WP50**	**ALB-250/WP50**	**ALB-500/WP70**	**ALB-1G/WP70**
Florisil	**FL-100/WP50**	**FL-250/WP50**	**FL-500/WP70**	**FL-1G/WP70**

Sample Prep - Solid Phase Extraction

Atoll™ - Polymer based

Atoll™ is a comprehensive product range based upon porous polymers consisting of ultra pure spherical particles with strictly controlled particle & pore size distribution. Atoll™ is the latest generation of polymer that does not shrink or swell with a range of standard solvents.

Atoll™ can be used through a wide range of pH (1-14) and is compatible with all solvents and existing samples. It has a very high surface area, Atoll™ XC exhibiting the highest surface area currently available on market (1500 sq M /g) approximately three times greater loading capacity than traditional silica sorbents. The higher capacity of Atoll™ allows for smaller bed masses.

Interchim bonding technology ensures greater batch to batch reproducibility for the Atoll™ family of products, therefore there is no longer a need for batch reservations. Our products subsequently achieve superior recovery rates relative to traditional media, exhibiting excellent reproducibility & consistency.

The Atoll™ family of products : Atoll Xtrem™ Capacity (XC) - Atoll™ Xtrem Capacity Wide Pore (XWP) - Atoll™ Hydrophilic (ATH) - Atoll™ Environment (AEV) - Atoll™ Lipophilic (ATL)

The Atoll™ range achieves accuracy of +/- 1% in mass per column thanks to a strictly controlled packing process. Atoll™ products are thoroughly quality control tested in-house to guarantee tracability. Products are supplied with an individual certificate detailing the specific production number and sorbent batch.

Atoll™ columns are packed in a PEHD/Al bag for long term integral storage. This prevents potential damage from UV and moisture.

Typical Atoll procedure

Conditioning
100 % MeOH : 1 ml
100 % H2O : 1 ml

Sample loading
0,2 - 1000 ml

Washing
H2O/MeOH (95/5) : 1 ml

Drying
2 min

Elution
100 % MeOH : 1 ml

Analysis

Type	Product code	Sorbent	Particle size	Porosity	Surface area
Atoll Xtrem Capacity	30XC	PSDVB	30 µm	n.a.	1500 m^2/g
	XC	PSDVB	70 µm	n.a.	1500 m^2/g
Atoll Xtrem Capacity Wide Pore	XWP	PSDVB	90 µm	n.a.	1200 m^2/g
Atoll Hydrophile	30ATH	n.a.	30 µm	70 Å	800 m^2/g
	ATH	n.a.	75 µm	70 Å	800 m^2/g
Atoll Environment	AEV	PSHEMA	75 µm	70 Å	800 m^2/g
Atoll Lipophile	ATL	PSDVB	100 µm	70 Å	800 m^2/g

Sample Prep - Solid Phase Extraction

Atoll™ XC columns - Polymer based

Atoll™ Xtrem Capacity (XC)

Atoll™ XC exhibits the highest surface area currently available on the market (1500 sq M /g), approximately three times greater loading capacity than traditional silica sorbents. Atoll XC improves, 2 to 3 fold, the retention of a compound of interest, compared to traditional silica.
Atoll XC polymer is a versatile sorbent for the extraction and pre-concentration of non-polar, polar, acidic, basic or neutral compounds.

- Std. 70 µm and 30 µm
- pH stability : 1 to 14
- Pharmaceutical applications : drugs & metabolites in biological fluids
- Environmental applications : PAH, PCB, carbamates, phenyl-ureas, acrylamide, glyphosate

Weight	Volume	Qty	Atoll XC	Atoll 30 µm XC
Std. columns / PE frits				
30 mg	1 ml	50 u	**XC-30/1**	**30XC-30/1**
50 mg	1 ml	50 u	**XC-50/1**	**30XC-50/1**
60 mg	1 ml	50 u	**XC-60/1**	**30XC-60/1**
75 mg	1 ml	50 u	**XC-75/1**	**30XC-75/1**
100 mg	1 ml	50 u	**XC-100/1**	**30XC-100/1**
100 mg	3 ml	50 u	**XC-100/3**	**On request**
150 mg	3 ml	50 u	**XC-150/3**	**On request**
200 mg	3 ml	50 u	**XC-200/3**	**On request**
250 mg	3 ml	50 u	**XC-250/3**	**On request**
500 mg	6 ml	30 u	**XC-500/6**	**On request**
LRC columns / PE frits				
50 mg	LRC 15	50 u	**XC-50LRC**	**30XC-50LRC**
75 mg	LRC 15	50 u	**XC-75LRC**	**30XC-75LRC**
100 mg	LRC 15	50 u	**XC-100LRC**	**30XC-100LRC**
200 mg	LRC 15	50 u	**XC-200LRC**	**On request**
Std. columns / PTFE frits				
30 mg	1 ml	50 u	**XC-30/1T**	**30XC-30/1T**
50 mg	1 ml	50 u	**XC-50/1T**	**30XC-50/1T**
60 mg	1 ml	50 u	**XC-60/1T**	**30XC-60/1T**
75 mg	1 ml	50 u	**XC-75/1T**	**30XC-75/1T**
100 mg	1 ml	50 u	**XC-100/1T**	**30XC-100/1T**
100 mg	3 ml	50 u	**XC-100/3T**	**On request**
150 mg	3 ml	50 u	**XC-150/3T**	**On request**
200 mg	3 ml	50 u	**XC-200/3T**	**On request**
250 mg	3 ml	50 u	**XC-250/3T**	**On request**
Glass columns / PTFE frits				
200 mg	6 ml	30 u	**XC-200/6G**	**On request**
500 mg	6 ml	30 u	**XC-500/6G**	**On request**

Std. columns
PP straight tube + 20µm PE frits

LRC columns
PP tube + 20µm PE frits

Std. columns
PP straight tube + 20µm PTFE frits

Glass columns
Glass tube + 20µm PTFE frits

Atoll™ Hydrophilic (ATH)

Atoll™ Hydrophilic contains proprietary chemical modifications that achieve unsurpassed compound extraction within 100% aqueous matrices. This technology facilitates mixed hydrophilic /hydrophobic interactions.

- Std. 70 µm
- pH stability : 2 to 12
- Pharmaceutical applications : drugs & metabolites in biological fluids
- Environmental applications : PAH, PCB, carbamates, phenyl-ureas, acrylamide, glyphosate

Weight	Volume	Qty	Atoll ATH	Atoll 30 µm ATH
Std. columns / PE frits				
30 mg	1 ml	50 u	**ATH-30/1**	**30ATH-30/1**
50 mg	1 ml	50 u	**ATH-50/1**	**30ATH-50/1**
60 mg	1 ml	50 u	**ATH-60/1**	**30ATH-60/1**
75 mg	1 ml	50 u	**ATH-75/1**	**30ATH-75/1**
100 mg	1 ml	50 u	**ATH-100/1**	**30ATH-100/1**
100 mg	3 ml	50 u	**ATH-100/3**	**On request**
150 mg	3 ml	50 u	**ATH-150/3**	**On request**
200 mg	3 ml	50 u	**ATH-200/3**	**On request**
250 mg	3 ml	50 u	**ATH-250/3**	**On request**
500 mg	6 ml	30 u	**ATH-500/6**	**On request**
1000 mg	6 ml	30 u	**ATH-1G/6**	**On request**
LRC columns / PE frits				
50 mg	LRC 15	50 u	**ATH-50LRC**	**30ATH-50LRC**
75 mg	LRC 15	50 u	**ATH-75LRC**	**30ATH-75LRC**
100 mg	LRC 15	50 u	**ATH-100LRC**	**30ATH-100LRC**
200 mg	LRC 15	50 u	**ATH-200LRC**	**On request**
Std. columns / PTFE frits				
30 mg	1 ml	50 u	**ATH-30/1T**	**30ATH-30/1T**
50 mg	1 ml	50 u	**ATH-50/1T**	**30ATH-50/1T**
60 mg	1 ml	50 u	**ATH-60/1T**	**30ATH-60/1T**
75 mg	1 ml	50 u	**ATH-75/1T**	**30ATH-75/1T**
100 mg	1 ml	50 u	**ATH-100/1T**	**30ATH-100/1T**
100 mg	3 ml	50 u	**ATH-100/3T**	**On request**
150 mg	3 ml	50 u	**ATH-150/3T**	**On request**
200 mg	3 ml	50 u	**ATH-200/3T**	**On request**
250 mg	3 ml	50 u	**ATH-250/3T**	**On request**
500 mg	6 ml	30 u	**ATH-500/6T**	**On request**
1000 mg	6 ml	30 u	**ATH-1G/6T**	**On request**
Glass columns / PTFE frits				
200 mg	6 ml	30 u	**ATH-200/6G**	**On request**
500 mg	6 ml	30 u	**ATH-500/6G**	**On request**

Sample Prep - Solid Phase Extraction

Atoll™ AEV columns - Polymer based

Atoll™ Environment (AEV)

Atoll™ AEV is a hydroxyethlmethacrylate - polystyrene polymer that supports the extraction of compounds weakly retained on C18. Atoll™ AEV exhibits high extraction flow of non-polar and mid-polar compounds that allows to clean and collect multi-residue samples in a single fraction prior to analysis. These characteristics identify this support as suitable to perform environmental extractions.

- 75 µm
- pH stability : 1 to 12
- Environmental applications : PAH, PCB, carbamates, phenyl-ureas

Weight	Volume	Qty	AEV
Std. columns / PE frits			
30 mg	1 ml	50 u	**AEV-30/1**
50 mg	1 ml	50 u	**AEV-50/1**
60 mg	1 ml	50 u	**AEV-60/1**
75 mg	1 ml	50 u	**AEV-75/1**
100 mg	1 ml	50 u	**AEV-100/1**
100 mg	3 ml	50 u	**AEV-100/3**
150 mg	3 ml	50 u	**AEV-150/3**
200 mg	3 ml	50 u	**AEV-200/3**
250 mg	3 ml	50 u	**AEV-250/3**
500 mg	6 ml	30 u	**AEV-500/6**
1000 mg	6 ml	30 u	**AEV-1G/6**
LRC columns / PE frits			
50 mg	LRC 15	50 u	**AEV-50LRC**
75 mg	LRC 15	50 u	**AEV-75LRC**
100 mg	LRC 15	50 u	**AEV-100LRC**
200 mg	LRC 15	50 u	**AEV-200LRC**
Std. columns / PTFE frits			
30 mg	1 ml	50 u	**AEV-30/1T**
50 mg	1 ml	50 u	**AEV-50/1T**
60 mg	1 ml	50 u	**AEV-60/1T**
75 mg	1 ml	50 u	**AEV-75/1T**
100 mg	1 ml	50 u	**AEV-100/1T**
100 mg	3 ml	50 u	**AEV-100/3T**
150 mg	3 ml	50 u	**AEV-150/3T**
200 mg	3 ml	50 u	**AEV-200/3T**
250 mg	3 ml	50 u	**AEV-250/3T**
500 mg	6 ml	30 u	**AEV-500/6T**
1000 mg	6 ml	30 u	**AEV-1G/6T**
Glass columns / PTFE frits			
200 mg	6 ml	30 u	**AEV-200/6G**
500 mg	6 ml	30 u	**AEV-500/6G**

Std. columns
PP straight tube + 20µm PE frits

LRC columns
PP tube + 20µm PE frits

Std. columns
PP straight tube + 20µm PTFE frits

Glass columns
Glass tube + 20µm PTFE frits

Atoll™ Lipophilic (ATL)

Atoll™ ATL is a 100 µm PSDVB optimized for the extraction of hydrophobic compounds in a large variety of matrices and is an excellent alternative to high flow silica for crude samples.

- pH stability : 1 to 14
- Applications : oils, muds, reactional environment after synthesis, …

Weight	Volume	Qty	Atoll ATL
Std. columns / PE frits			
30 mg	1 ml	50 u	**ATL-30/1**
50 mg	1 ml	50 u	**ATL-50/1**
60 mg	1 ml	50 u	**ATL-60/1**
75 mg	1 ml	50 u	**ATL-75/1**
100 mg	1 ml	50 u	**ATL-100/1**
100 mg	3 ml	50 u	**ATL-100/3**
150 mg	3 ml	50 u	**ATL-150/3**
200 mg	3 ml	50 u	**ATL-200/3**
250 mg	3 ml	50 u	**ATL-250/3**
500 mg	6 ml	30 u	**ATL-500/6**
1000 mg	6 ml	30 u	**ATL-1G/6**
LRC columns / PE frits			
50 mg	LRC 15	50 u	**ATL-50LRC**
75 mg	LRC 15	50 u	**ATL-75LRC**
100 mg	LRC 15	50 u	**ATL-100LRC**
200 mg	LRC 15	50 u	**ATL-200LRC**
Std. columns / PTFE frits			
30 mg	1 ml	50 u	**ATL-30/1T**
50 mg	1 ml	50 u	**ATL-50/1T**
60 mg	1 ml	50 u	**ATL-60/1T**
75 mg	1 ml	50 u	**ATL-75/1T**
100 mg	1 ml	50 u	**ATL-100/1T**
100 mg	3 ml	50 u	**ATL-100/3T**
150 mg	3 ml	50 u	**ATL-150/3T**
200 mg	3 ml	50 u	**ATL-200/3T**
250 mg	3 ml	50 u	**ATL-250/3T**
500 mg	6 ml	30 u	**ATL-500/6T**
1000 mg	6 ml	30 u	**ATL-1G/6T**
Glass columns / PTFE frits			
200 mg	6 ml	30 u	**ATL-200/6G**
500 mg	6 ml	30 u	**ATL-500/6G**

Sample Prep - Solid Phase Extraction

Atoll™ XWP columns - Polymer based

Atoll™ Xtrem Capacity Wide Pore (XWP)

Atoll™ XWP is a highly cross linked PSDVB exhibiting a very high surface area (1200 m^2/g) and a 90 µm particle size. The apparent porosity of Atoll™ XWP makes it particularly suitable for protein & peptide cleaning from biologic fluids within a cut-off limit of ~ 500 KD. Its characteristics guarantee an excellent throughput and achieve efficient extractions without clogging.

- pH stability : 1 to 14
- Applications : proteins and peptides in polar matrices, molecules with high molecular weight in all solvent types.

Weight	Volume	Qty	Atoll XWP
Std. columns / PE frits			
30 mg	1 ml	50 u	**XWP-30/1**
50 mg	1 ml	50 u	**XWP-50/1**
60 mg	1 ml	50 u	**XWP-60/1**
75 mg	1 ml	50 u	**XWP-75/1**
100 mg	1 ml	50 u	**XWP-100/1**
100 mg	3 ml	50 u	**XWP-100/3**
150 mg	3 ml	50 u	**XWP-150/3**
200 mg	3 ml	50 u	**XWP-200/3**
250 mg	3 ml	50 u	**XWP-250/3**
500 mg	6 ml	30 u	**XWP-500/6**
LRC columns / PE frits			
50 mg	LRC 15	50 u	**XWP-50LRC**
75 mg	LRC 15	50 u	**XWP-75LRC**
100 mg	LRC 15	50 u	**XWP-100LRC**
200 mg	LRC 15	50 u	**XWP-200LRC**
Std. columns / PTFE frits			
30 mg	1 ml	50 u	**XWP-30/1T**
50 mg	1 ml	50 u	**XWP-50/1T**
60 mg	1 ml	50 u	**XWP-60/1T**
75 mg	1 ml	50 u	**XWP-75/1T**
100 mg	1 ml	50 u	**XWP-100/1T**
100 mg	3 ml	50 u	**XWP-100/3T**
150 mg	3 ml	50 u	**XWP-150/3T**
200 mg	3 ml	50 u	**XWP-200/3T**
250 mg	3 ml	50 u	**XWP-250/3T**
Glass columns / PTFE frits			
200 mg	6 ml	30 u	**XWP-200/6G**
500 mg	6 ml	30 u	**XWP-500/6G**

Std. columns
PP straight tube + 20µm PE frits

LRC columns
PP tube + 20µm PE frits

Std. columns
PP straight tube + 20µm PTFE frits

Glass columns
Glass tube + 20µm PTFE frits

Atoll™ Bio-Ion Exchange columns - Polymer based

Atoll™ Bio-Ion Exchange

Atoll™ Bio-Ion Exchange bonded chemistry exhibits Ion exchange interaction and offers distinct selectivity to support the extraction and purification of proteins in aqueous matrices, such as biological fluids.

Adsorbent vol.	Volume	Qty	SPCE	WPCE	WPAE	SPAE
0,5 ml	3 ml	50 u	**SPCE-0.5/3**	**WPCE-0.5/3**	**WPAE-0.5/3**	**SPAE-0.5/3**
1 ml	3 ml	50 u	**SPCE-1X/3**	**WPCE-1X/3**	**WPAE-1X/3**	**SPAE-1X/3**
2 ml	6 ml	50 u	**SPCE-2X/6**	**WPCE-2X/6**	**WPAE-2X/6**	**SPAE-2X/6**

Sample Prep - Solid Phase Extraction

Atoll™ 96 well plates - Polymer based

Atoll™ is a comprehensive product range based upon porous polymers consisting of ultra pure spherical particles with strictly controlled particle & pore size distribution. Atoll™ is the latest generation of polymer that does not shrink or swell within a range of standard solvents. The Atoll™ family of products : Atoll Xtrem™ Capacity (XC) - Atoll™ Xtrem Capacity Wide Pore (XWP) - Atoll™ Hydrophilic (ATH) - Atoll™ Environment (AEV) - Atoll™ Lipophilic (ATL)
See page A.43 to A.49 for relevant information about Atoll™ characteristics.

Automated cleanup procedures are now an integral part of the modern laboratory.

Atoll™ is available in a 96 well format with a 2 ml volume per well. This high quality unit provides rapid throughput of sample, within an automated process, whilst establishing excellent well-to-well consistency.

Atoll™ 96 well plates utilise Interchim's state of the art automated weight machine.
This packing technology guarantees unprecedented accuracy (+/- 1% mass per column) compared to the commonly utilised competitor volumetric systems. Atoll™ therefore raises the standards & client expectations for sample recovery /reproducibility.

Atoll™ 96 well plates are QC tested in-house to guarantee tracibility. Products are supplied with an individual certificate detailing Mfg number, Sorbent batch number and specifications. An additional certificate is supplied that states real sorbent mass in each individual well.

Atoll™ 96 well plates are packed in a PEHD/Al bag for long term integral storage. This prevents potential damage from UV and moisture.

Atoll™ 96 well plates are manufactured from polypropylene, conform to a standard footprint (127,76 mm x 85,47 mm x 19,74 mm) and are compatible with existing systems on the market.

Weight	Qty	Atoll XC	Atoll 30XC	Atoll ATH	Atoll 30ATH
30 mg	1 u	**XC-30/WP20**	**30XC-30/WP20**	**ATH-30/WP20**	**30ATH-30/WP20**
50 mg	1 u	**XC-50/WP20**	**30XC-50/WP20**	**ATH-50/WP20**	**30ATH-50/WP20**
60 mg	1 u	**XC-60/WP20**	**30XC-60/WP20**	**ATH-60/WP20**	**30ATH-60/WP20**
75 mg	1 u	**XC-75/WP20**	**30XC-75/WP20**	**ATH-75/WP20**	**30ATH-75/WP20**
100 mg	1 u	**XC-100/WP20**	**30XC-100/WP20**	**ATH-100/WP20**	**30ATH-100/WP20**
150 mg	1 u	**XC-150/WP20**	**n.a.**	**n.a.**	**n.a.**
200 mg	1 u	**XC-200/WP20**	**n.a.**	**n.a.**	**n.a.**

Weight	Qty	Atoll AEV	Atoll ATL	Atoll XWP
30 mg	1 u	**AEV-30/WP20**	**ATL-30/WP20**	**XWP-30/WP20**
50 mg	1 u	**AEV-50/WP20**	**ATL-50/WP20**	**XWP-50/WP20**
60 mg	1 u	**AEV-60/WP20**	**ATL-60/WP20**	**XWP-60/WP20**
75 mg	1 u	**AEV-75/WP20**	**ATL-75/WP20**	**XWP-75/WP20**
100 mg	1 u	**AEV-100/WP20**	**ATL-100/WP20**	**XWP-100/WP20**

Sample Prep - Solid Phase Extraction

Polymer/ Silica kits - method development & optimization

The rapid development of robust, reproducible & repeatable Solid Phase Extraction methods is a primary challenge for todays analyst. To assist with the achievement of this goal Interchim has developed a complete range of kits. The analyst can combine, within the kits, sorbent nature (silicas or polymers), mass and container volume. The combination of these parameters is critical to obtain optimum extraction yield as well as achieving good reproducibility.

Method development kits provide quick and efficient selection of the most suitable column. The analyst should know a basic background of information regarding the nature of the compound of interest, the impurities and the matrix. Upon identification of these parameters the optimization kit should optimize extraction yield and elution volume.

Interchim is happy to assist you in building an appropriate kit for method development and optimization.

Pharmaceutical 1

Qty	P/N SPE-D9 Kit 100 mg / 1 mL	P/N SPE-D10 Kit 200 mg / 3 mL
6 columns C18-S	**C18-S-100/1**	**C18-S-200/3**
6 columns C8-S	**C8-S-100/1**	**C8-S-200/3**
6 columns CN-S	**CN-S-100/1**	**CN-S-200/3**
6 columns MM1	**MM1-100/1**	**MM1-200/3**
6 columns RPAQ	**RPAQ-100/1**	**RPAQ-200/3**
6 columns SCX	**SCX-100/1**	**SCX-200/3**
6 columns SAX	**SAX-100/1**	**SAX-200/3**

Pharmaceutical 2

Qty	P/N SPE-D11 Kit 100 mg / 1 mL	P/N SPE-D12 Kit 200 mg / 3 mL
6 columns C18-S	**C18-S-100/1**	**C18-S-200/3**
6 columns C8-S	**C8-S-100/1**	**C8-S-200/3**
6 columns RPAQ	**RPAQ-100/1**	**RPAQ-200/3**
6 columns MM1	**MM1-100/1**	**MM1-200/3**
6 columns SCX	**SCX-100/1**	**SCX-200/3**
6 columns XC	**XC-100/1**	**XC-200/3**
6 columns AEV	**AEV-100/1**	**AEV-200/3**

Sample Prep - Solid Phase Extraction

Polymer/ Silica kits - method development & optimization

Non-polar kit

P/N SPE-D54 100 mg / 1 mL	P/N SPE-D55 200 mg / 3 mL	P/N SPE-D56 500 mg / 6 mL
6 columns C18-S	6 columns C18-S	6 columns C18-S
6 columns C18U-S	6 columns C18U-S	6 columns C18U-S
6 columns RPAQ	6 columns RPAQ	6 columns RPAQ
6 columns C8-S	6 columns C8-S	6 columns C8-S
6 columns C2	6 columns C2	6 columns C2
6 columns PH-S	6 columns PH-S	6 columns PH-S
6 columns CH	6 columns CH	6 columns CH
6 columns ATH	6 columns ATH	6 columns ATH
6 columns XC	6 columns XC	6 columns XC

Ion exchange & mixed mode kit

P/N SPE-D57 200 mg / 3 mL	P/N SPE-D58 500 mg / 6 mL
6 columns SCX	6 columns SCX
6 columns SAX	6 columns SAX
6 columns WCX	6 columns WCX
6 columns DEAE	6 columns DEAE
6 columns NH2	6 columns NH2
6 columns MM1	6 columns MM1
6 columns MM2	6 columns MM2
6 columns MM3	6 columns MM3
6 columns MM4	6 columns MM4

Polymer kit

P/N SPE-D15 100 mg / 1 mL	P/N SPE-D59 50 mg / 1 mL
6 columns XC	6 columns XC
6 columns XWP	6 columns XWP
6 columns AEV	6 columns AEV
6 columns ATH	6 columns ATH
6 columns ATL	6 columns ATL
	6 columns 30ATH
	6 columns 30XC

Optimization kit

QtyP/N SPE-DO60	P/N SPE-DO61
6 columns C18-S, 30mg/1ml	6 columns XC, 20mg/1ml
6 columns C18-S, 40mg/1ml	6 columns XC, 30mg/1ml
6 columns C18-S, 50mg/1ml	6 columns XC, 40mg/1ml
6 columns C18-S, 60mg/1ml	6 columns XC, 50mg/1ml
6 columns C18-S, 70mg/1ml	6 columns XC, 60mg/1ml
6 columns C18-S, 80mg/1ml	6 columns XC, 70mg/1ml
6 columns C18-S, 90mg/1ml	6 columns XC, 80mg/1ml
6 columns C18-S, 100mg/1ml	

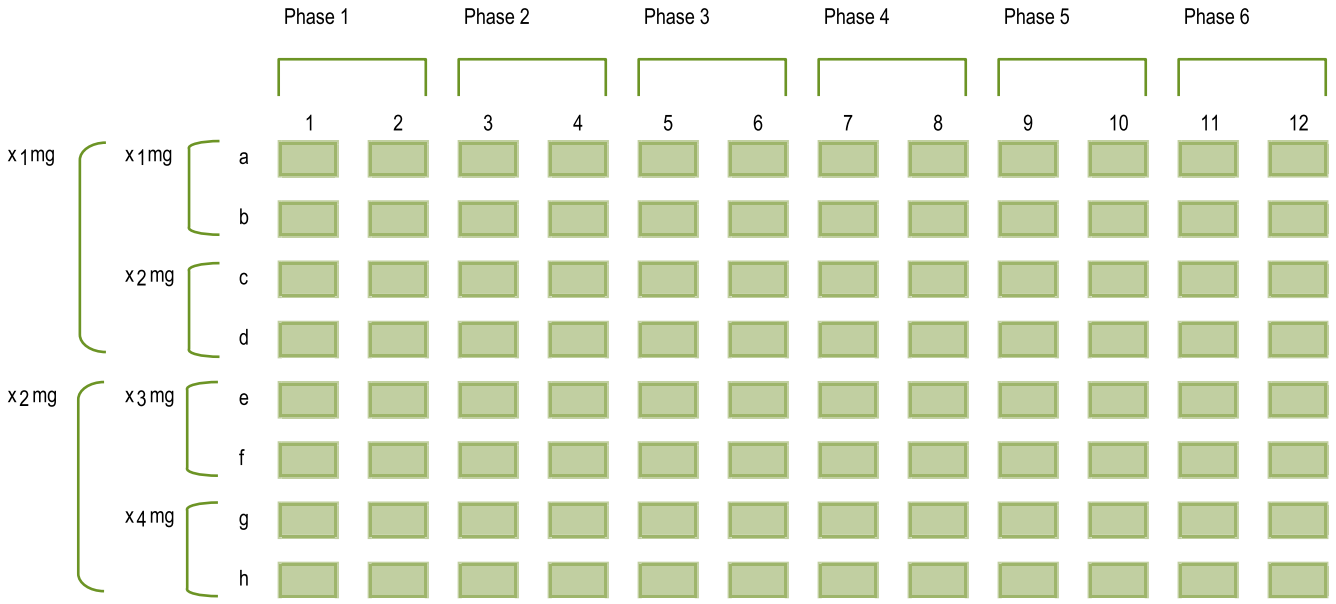
Polymer/ Silica - 96 well plate custom kits

The 96 well format allows for a faster, easier process of SPE method development. Kit selection should be based upon selection of appropriate sorbent and the identification of appropriate sorbent mass per well (20 to 200 mg relative to sorbent density).

Interchims technical center can assist with identification of your specific requirements. Plate proposals are provided within 2 working days of receiving your enquiry.
Your specified plate is supplied with a weight certificate that specifies exact sorbent mass in every well to a tolerance of +/- 1% .

Description	P/N
96 well plate development kit	**96WP-DO63191**

E.g. 96 well-plate pharmaceutical method development



Upti-clean™ silica media

Hydrophobic & Hydrophilic		Ion Exchange & Mixed	
C18-S	end capped	NH_2	weak anion exchanger
C18U-S	non-end capped	DEAE	medium anion exchanger
LCC	end capped	SAX	strong anion exchanger
RP.AQ	hydrophilic	MM4	hydrophobic /weak anion exchanger
C8-S	end capped	MM2	hydrophobic /strong anion exchanger
C8U-S	non-end capped	WCX	weak cation exchanger
CN-S	Cyano	SCX	strong cation exchanger
PH-S	Phenyl	MM3	hydrophobic /weak cation exchanger
SI-S	Silica	MM1	hydrophobic /strong cation exchanger

Atoll® Polymer

Hydrophobic, Hydrophilic & Mixed

ATL	Medium hydrophobic
XC	Strong hydrophobic, 70 µm
30XC	Strong hydrophobic, 30 µm
XWP	Strong hydrophobic, wide pore
AEV	Hydrophobic /hydrophilic
ATH	Medium hydrophilic, 70 µm
30ATH	Medium hydrophilic, 30 µm

Sample Prep - Solid Phase Extraction

Interchim custom packing capabilities

Interchim's state of the art automated weight machine facilitates the custom packing of columns and multi-well plates that guarantees unprecedented accuracy (+/- 1% mass per column) compared to the commonly utilised competitor volumetric systems.

Our systems therefore raise the standards & client expectations for sample recovery /reproducibility.

Interchim is able to assist clients in identification of the necessary parameters for custom supply i.e.

- Sorbent type
- Sorbent mass

- Column, plate or container format
- Column, plate or container volume
- Frit type and porosity

- Quantity of units
- Weight certification

Considerations toward production parameters are outlined on the following page.

Proposals

Proposals are provided within 2 working days of receiving your enquiry.
This will incorporate a confidentiality agreement to maintain the integrity of both parties.

Interchim custom packing capabilities

Sorbent considerations

A number of client enquiries are for the packing of their own sorbent or from a third party manufacturer. In such instances, sorbent type, physical characteristics and a safety data sheet need to be specified.

The Sorbent Mass is, in part, governed by the parameters of the column/ plate to be packed. The current range for this service is between 15 mg and 70 g with a +/- 1% guaranteed accuracy (according to our standard 1 ml to 150 ml containers).

Interchim's sorbent selection guide on page A.28 can assist your selection of appropriate sorbent. The guide highlights a range of ~ 50 silica or polymer based selectivities.

Sorbent columns or plates

Column

- Polypropylene straight reservoir 1 - 3 - 6 - 15 - 25 - 75 - 150 ml
- Polypropylene LRC (Large Reservoir Capacity) 15 ml
- Glass straight reservoir 6 ml

Plate

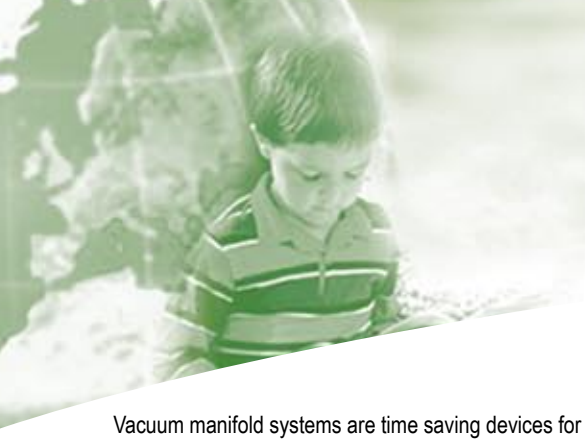
- 96 Well plates 2 ml
- 48 Well plates 5 - 7 ml

Frit type and porosity

- PTFE, Teflon® or glass fiber frits for polypropylene straight tubes & LRC reservoirs
- Teflon® frits for straight glass tubes
- PTFE frits for 48 & 96 plates

Miscellaneous

The packing of specialty containers are considered relative to the parameters of our packing system.



Sample Prep - Solid Phase Extraction

Vacuum manifold for SPE columns

Vacuum manifold systems are time saving devices for sample preparation that establish greater consistency and reproducibility.

Interchim manifolds are compatible with all Luer fitting SPE columns existing on the market and allow the simultaneous processing of 12-to-24 samples.

Units are easy to set up, with a simple vacuum adjustment. Stop cocks are installed on each path.

Vacuum pumps minimize flow problems associated with crude sample or insufficient vacuum.

Vacuum manifold protocol P/N 518100

1. Screw the black lid of the upper part of the manifold
2. Introduce the plastic waste in the Glass basin
3. Insert collection needles on male Luer outlets under the lid
4. Set taps on the lids female Luer inlets
5. Place lid cover on the glass basin
6. Install SPE columns on closed taps
7. Close unused lids on female Luer inlets
8. Open vacuum on the Glass basin outlet valve
9. Establish SPE steps at constant flow and depression (the vacuum may be monitored with the Glass basin valve)
10. Remove waste after the rinsing step & insert collection rack with glass tubes
11. Replace lid cover, add vacuum to Glass basin, elute to collect sample
12. Insert dry cover instead of the lid. re-apply vacuum
13. Attach dry cover (with heated nitrogen outlet) for evaporation and sample concentration.

Description	12 position P/N	Qty	16 position P/N	Qty	24 position P/N	Qty
Vacuum manifold Set-Complete	**518100**	u	**336570**	u	**Q72030**	u
Glass chamber	**Q71530**	u	**Q71900**	u	**Q72230**	u
Cover, gasket, & 12 stopcocks	**Q71540**	u	**Q71910**	u	**Q72240**	u
Gaskets	**Q71550**	2 u	**Q71920**	2 u	**Q72250**	2 u
Vacuum gauge, valve, & glass chamber	**Q71560**	u	**Q71930**	u	**Q72260**	u
Needles - Polypropylene	**Q57820**	12 u	**Q71940**	16 u	**Q57830**	24 u
Needles - Stainless Steel	**Q71570**	12 u	**Q71950**	16 u	**Q72270**	24 u
Collection Rack-shelves, legs, clips, & posts	**Q71580**	u	**Q71960**	u	**Q72280**	u
Plate - 13 mm	**Q71590**	u	**Q71970**	u	**Q72290**	u
Plate - volumetric flask	**Q71600**	u				
Plate - 16 mm test tube	**Q71610**	u	**Q71980**	u	**Q72300**	u
Plate - autosampler vial	**Q71640**	u				
Plate - dimple	**Q71660**	u	**Q71990**	u	**Q72310**	u
Plate - base	**Q71670**	u	**Q72000**	u	**Q72320**	u
Stopcocks	**Q71680**	12 u	**Q72010**	16 u	**Q72330**	24 u
Drying attachment	**Q71690**	u	**Q72020**	u	**Q72340**	u
PP vacuum waste container	**Q71700**	10 u				
Support posts for rack	**BI4330**	u	**BI4340**	u	**BI4340**	u

Accessories

Description	P/N	Qty
Female Luer Fittings	**Q72360**	2 u
Male Luer Fittings	**Q72370**	2 u
Support posts for rack	**Q72380**	3 u
Legs for cover - black	**Q72390**	4 u
Vacuum gauge & valve assembly	**Q72400**	u
Valve assembly only	**Q72420**	u
Vacuum gauge	**Q72440**	u
Retaining clips	**Q72450**	12 u
Vacuum manifold plugs	**Q72460**	50 u
Glass collection tube 12 x 75 mm	**CD9520**	1000 u
Glass collection tube 16 x 100 mm	**CD9530**	1000 u

Needles and control valve

Description	P/N	Qty
Control Valve	**Q72470**	25 u
Control Valve	**Q72471**	50 u
Teflon Needles	**Q72500**	100 u
Teflon Needles	**Q72501**	500 u
Teflon Flow Needle	**CD7022**	100 u
Teflon Flow Needle	**CD7023**	500 u

Flash Purification

Vacuum manifold system - 10 position

accepts large capacity columns (25, 75 & 150 ml).

Description	P/N	Qty
Flash Vacuum Manifold Set-Complete	**BU3010**	u
Glass chamber	**BU3020**	u
Cover, gasket, & 10 stopcocks	**BU3030**	u
Gaskets	**BU3040**	2 u
Vacuum gauge, valve, & glass chamber	**BU3050**	u
Needles - Polypropylene	**BU3060**	10 u
Needles - Stainless Steel	**BU3070**	10 u
Collection Rack-shelves, legs, clips, & posts	**BU3080**	u
Plate - 19 mm	**BU3090**	u
Plate - 25 mm	**BU3100**	u
Plate - dimple	**BU3110**	u
Plate - base	**BU3120**	u
Stopcocks	**BU3140**	10 u
Drying attachment	**BU3160**	u
Support posts for rack	**BI4340**	u

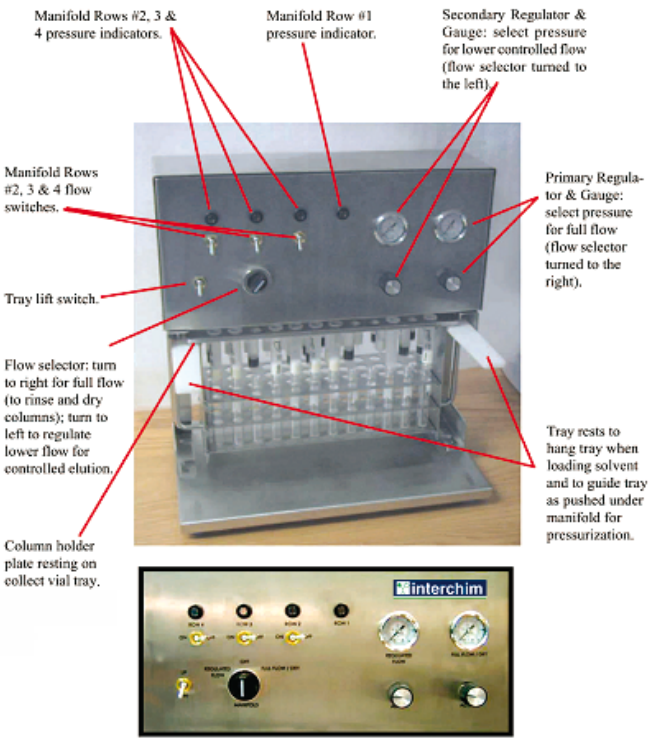
Sample Prep - Solid Phase Extraction

Positive pressure manifold

The positive pressure manifold provides an ultra efficient, reproducible, simple robust way to simultaneously process up to 48 samples. Individually regulated positions provide even pressure to each column. Manifolds can accommodate a large range of column sizes whilst providing an even flow for each position.

- Individually regulated positions to provide even pressure to each column.
- Four banks - 12 positions each. Flow is always provided to bank one. User can control flow to each of the other three banks.
- Capacity - 1-to-48 columns of either 1 mL, 3 mL, 6 mL, 10 mL or 15 mL. Switch between column sizes by using appropriate adaptor plate.
- Air Supply : N_2 or compressed air regulated to 75 psi & filtered to 10 µm.
- Dual pressure regulators allow users different pressure setting for extraction and column drying.
- Waste reservoir included that can be emptied between each waste step if required.
- Single switch raises & lowers sample racks and creates an airtight seal.

Description	P/N	Qty
Completed manifold system with 10 mL / 15 mL rack, collection rack, waste rack and waste bin	**BY9950**	1 u
10 mL & 15 mL SPE rack	**CD3550**	1 u
Adapter extraction plates for 1 mL columns	**CD3520**	1 u
Adapter extraction plates for 3 mL columns	**CD3530**	1 u
Adapter extraction plates for 6 mL columns	**CD3540**	1 u
Installation kit	**CK4570**	1 u
Waste rack	**CD3570**	1 u
Collection rack 13 x 100 mm glass tubes	**CH6220**	1 u
Collection rack 16 x 100 mm glass tubes	**CD3560**	1 u
Replacement in-line air filter	**CD3580**	1 u



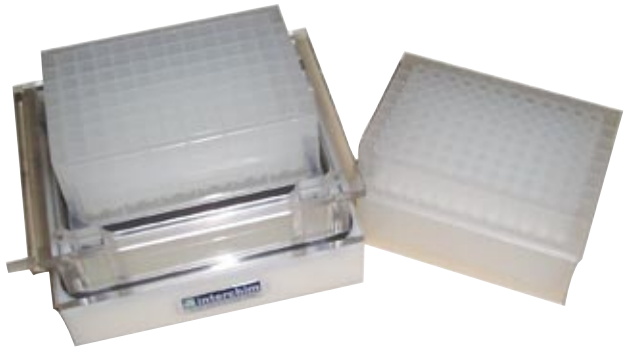
Universal vacuum manifold for 48 & 96 well plates

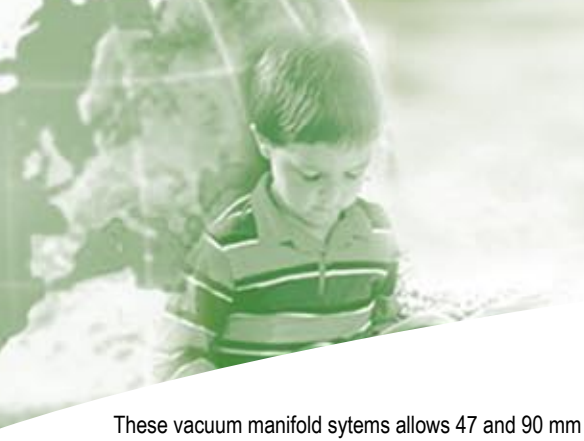
The universal well plate vacuum manifold is a versatile and effective vacuum manifold system suited to both 48 & 96 well plates for fast and efficient automated sample processing techniques.

- Filtration
- Protein crash filtration
- Solid Phase Extraction (SPE)

Description	P/N	Qty
Well plate manifold (48 &96), complete system	**AN1530**	1 u
24 well collection plates 10 ml	**BN9650**	25 u
24 well pre-pierced lid cover	**CA2320**	100 u
24 well collection holder	**BM4880**	1 u
24 well extraction holder	**BM4890**	1 u
24 well rack collection tubes 16 x 60 mm	**CE3800**	24 u
48 well collection plate 5 ml	**BG7400**	25 u
48 well pre-pierced lid cover	**BG7410**	100 u
48 well collection holder	**BM4900**	1 u
48 well extraction holder	**BM4910**	1 u
48 well rack collection tubes 11 x 60 mm	**CE3790**	48 u
96 well collection plates 2 ml	**U90380**	50 u
96 well pre-pierced lid cover	**BD7730**	100 u
Standard base	**BM4930**	1 u
Up cover	**CD3250**	1 u
Universal Tube	**CD3270**	1 u
EPDM Gasket	**CD3300**	1 u
Neoprene Gasket	**CD3330**	1 u
Wedge 12.7 mm	**CD3360**	1 u
Wedge 25.4 mm	**CD3390**	1 u
Gauge (Manometer) / Liquid trap	**CD3420**	1 u
48 wells manifold for 3 ml tubes without flange	**CD3500**	1 u
24 wells manifold for 3 ml tubes without flange	**CD3510**	1 u
24 well plate caps	**CH6230**	24 u
48 well plate caps	**CH6240**	48 u

[Circular flanges are necessary for 3 & 6 ml formats. A wedge can be added to tighten the upper holder higher and allows to collect sample in approp. glass tubes. 24 & 48 postion collecting plates can also be used.]





Sample Prep - Solid Phase Extraction

Vacuum manifold for 47 & 90 mm disc

These vacuum manifold sytems allows 47 and 90 mm membrane filtration. The KEL-F membrane holder is suited for many solvents without filtrate contamination (80°c limit).

Manifolds are available with 1, 3 or 6 independent stations with a stop valve on each path. Aluminium clamps ensure a very tight seal between loading reservoir, the base and membrane holder.

Description	P/N	Qty
1 station manifold assembly (47 mm). Includes : 1 station manifold, KEL-F screen, funnel, base, clamp	**BX4370**	1 u
1 station manifold assembly (90 mm). Includes : 1 station manifold, KEL-F screen, funnel, base, clamp	**BX4380**	1 u
3 station manifold assembly (47 mm). Includes : 3 station manifold, KEL-F screen, funnel, base, clamp	**BX4350**	1 u
3 station manifold assembly (90 mm). Includes : 3 station manifold, KEL-F screen, funnel, base, clamp	**BX4360**	1 u
6 station manifold assembly (47 mm). Includes : 6 station manifold, KEL-F screen, funnel, base, clamp	**BX2030**	1 u
6 station manifold assembly (90 mm). Includes : 6 station manifold, KEL-F screen, funnel, base, clamp	**BX4340**	1 u
1 station manifold	**BX4400**	1 u
3 station manifold	**BX4410**	1 u
6 station manifold	**BX4420**	1 u
47 mm aluminum clamp	**BX4430**	1 u
90 mm aluminum clamp	**BX4440**	1 u
47 mm support base	**BX4450**	1 u
47 mm 300 ml funnel	**BX4460**	1 u
90 mm support base	**BX4470**	1 u
90 mm 1000 ml funnel	**BX4480**	1 u
47 mm KEL-F screen	**BX4490**	1 u
90 mm KEL-F screen	**BX4500**	1 u
Cartridge adaptor	**BX4510**	1 u
Teflon stopcocks for block manifolds	**CH6260**	6 u

Polypropylene tubes

Volume	Qty	P/N
Empty column		
1 ml	100 u	**541410**
4 ml	100 u	**541420**
8 ml	100 u	**541430**
15 ml	100 u	**541440**
25 ml	100 u	**541450**
75 ml	50 u	**823370**
150 ml	25 u	**S28581**
Column + one polyethylene 20 µm frits		
1 ml	100 u	**F97660**
4 ml	100 u	**F97710**
8 ml	100 u	**F97730**
15 ml	100 u	**F97750**
25 ml	100 u	**F97760**
75 ml	50 u	**F97780**
Column + one polyethylene 20 µm frits + caps		
1 ml	100 u	**F97800**
4 ml	100 u	**F97810**
8 ml	100 u	**F97820**
15 ml	100 u	**F97830**
25 ml	100 u	**F97840**
75 ml	50 u	**F97860**
Column + one PTFE 20 µm frits + caps		
1 ml	100 u	**F97870**
4 ml	100 u	**F97890**
8 ml	100 u	**F97900**
15 ml	100 u	**F97910**
25 ml	100 u	**F97920**
75 ml	50 u	**F97940**
Column + two polyethylene 20 µm frits		
1 ml	100 u	**F97960**
4 ml	100 u	**F97970**
8 ml	100 u	**F97980**
15 ml	100 u	**F97990**
25 ml	100 u	**F98000**
75 ml	50 u	**F98020**

Polypropylene tubes

Volume	Porosity	Membranes	Qty	P/N
Column + two polyethylene 20 µm frits				
1 ml			100 u	**F98040**
4 ml			100 u	**F98050**
8 ml			100 u	**F98060**
15 ml			100 u	**F98070**
25 ml			100 u	**F98080**
75 ml			50 u	**F98100**
1/16" PE frits				
1 ml	20 µm	PE	100 u	**779530**
4 ml	20 µm	PE	100 u	**841880**
8 ml	20 µm	PE	100 u	**858750**
15 ml	20 µm	PE	100 u	**823280**
25 ml	20 µm	PE	100 u	**885460**
75 ml	20 µm	PE	50 u	**823380**
1 ml	20 µm	PTFE	100 u	**F97520**
4 ml	20 µm	PTFE	100 u	**F97550**
8 ml	20 µm	PTFE	100 u	**F97560**
15 ml	20 µm	PTFE	100 u	**F97570**
25 ml	20 µm	PTFE	100 u	**F97580**
75 ml	20 µm	PTFE	50 u	**F97600**
1/8" PE frits				
3 ml	20 µm	PE	100 u	**AM2340**
8 ml	20 µm	PE	100 u	**AZ3340**
15 ml	20 µm	PE	100 u	**S08600**
1/8" PE frits				
25 ml	20 µm	PE	100 u	**S08610**
75 ml	20 µm	PE	50 u	**S08620**
150 ml	20 µm	PE	50 u	**S28600**
Caps				
1 ml			100 u	**F97350**
4 ml			100 u	**F97360**
8 ml			100 u	**F97370**
15 ml			100 u	**F97440**
25 ml			100 u	**F97470**
75 ml			50 u	**F97490**
End caps			100 u	**F97510**


20 µm PE frits
(polyethylene)


Frits

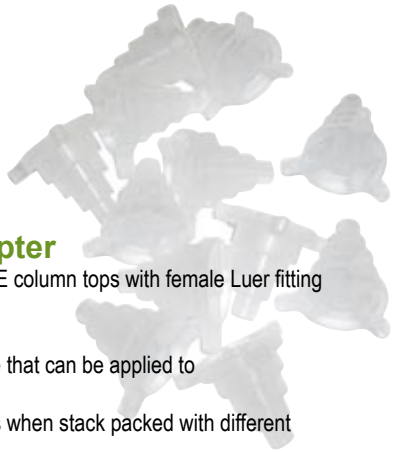

Caps


End caps

SPE Accessories

Glass columns

- Length : 300 mm
- Internal Ø : 20.4 mm
- Fitting : male Luer
- Option : PTFE or PE taps



SPE column adapter

Suitable for 1, 3 and 6 ml SPE column tops with female Luer fitting

Applications :

- Increase reservoir volume that can be applied to the SPE column.
- Allow multiple selectivities when stack packed with different sorbent columns.

Uptiplate Collection Plate & Tools for Chemistry

Uptiplate collection plates are compatible with all vacuum manifolds and SPE /filtration automated systems for the collection of solvents & samples. Manufactured from high quality polymer, they are available in round or square well formats and the well bottoms have a “U” or “V” shape design for sample management.

Interchim generally recommends the square “U” shape format. The “U” format enhances sample collection whilst the square well design assists the introduction of a flexible sealing lid.

Collection plate	Well	Well bottom	Max. volume	Qty	P/N
24 well 10 ml	Square	V	10 ml	25 u	**BN9650**
24 well 10 ml	Square	U	9 ml	10 u	**CA2260**
48 well 5 ml	Square	V	5 ml	25 u	**BG7400**
48 well 7,5 ml	Square	V	7,3 ml	30 u	**BG7430**
96 well 2 ml	Square	V	2,1 ml	50 u	**U90380**
96 well 1 ml	Square	U	1 ml	50 u	**U90370**
96 well 350 µl	Square	U	350 µl	50 u	**U90360**
96 well 1,3 ml	Square	V	1,35 ml	25 u	**BN1940**
96 well 1 ml	Round	U	1 ml	50 u	**U90350**
384 well 150 µl	Square	V	160 µl	25 u	**BD3390**
384 well 50 µl	Square	U	55 µl	60 u	**BM4970**
384 well 50 µl	Square	U	55 µl	30 u	**BM4971**

Uptiplate soft cover

Uptiplate soft covers maintain sample integrity during delivery and storage. They are compatible with all collection plates on the market.

Pre-pierced covers are available to avoid needle clogging during automated analysis.

Santoprene is currently the soft cover of choice exhibiting a chemical resistance similar to Neoprene. They are not compatible with chlorinated or aromatic solvents such as Benzene, CCl_4,$CHCl_3$, $CHCl_2$, CH_3Cl, Chlorobenzene, Cyclohexane, Toluene, Xylene. In such instances Teflon /Silicone lids are usually more suitable.

Collection plate	Well bottom	Pierceable	Nature	Qty	P/N
24 well	Square	Yes	Santoprene	100 u	**CA2320**
48 well	Square	Yes	Santoprene	100 u	**BG7410**
48 well	Square	No	Santoprene	100 u	**BG7420**
96 well	Square	Yes	Santoprene	100 u	**BD7730**
96 well	Square	Yes	Santoprene	50 u	**BD7731**
96 well	Square	Yes	Teflon /Silicone	20 u	**CD9840**
96 well	Square	No	Santoprene	100 u	**AP3131**
96 well	Square	No	Santoprene	50 u	**AP3130**
96 well	Round	No	Elastomer	50 u	**BB2740**
96 well	Round	Yes	Silicone encased Teflon	50 u	**CD9490**
96 well	Round	Yes	Teflon /Silicone	20 u	**CD9510**
384 well	Square	Yes	Silicone encased Teflon	30 u	**CD9500**

96 Vial plates

96 Vial plates are polymer based holders for type 1 borosilicate glass collection vials. They are compatible with all solvents and facilitate the collection of samples after filtration or extraction to 380 µm.

An elastomer coated PTFE soft cover is inserted on every vial for sample delivery & storage. This is easily achieved with a Mat Capper. Vials can be directly accessed with a syringe. A knife can be used to access one or several closed vials.

Description	Qty	P/N
Plate + 96 vials	5 u	**863610**
Glass vials	500 u	**863620**
Soft cover	5 u	**863640**
Cutter	1 u	**863660**
Mat Capper	1 u	**AL5880**

Tools for Chemistry

Uptiplate solvent storage plates

Polypropylene reagent reservoirs are generally used for reagent & solvent storage. They are suitable for a number of liquid handling configurations, from 8 or 12 channel pipettes, to 96 or 384 pipette tip heads.

Plate wells have a pyramid construction to reduce dead volume. Suited to any robotic system.

Description	Qty	P/N
Uptiplate solvent storage		
24 square well - 7,5 ml PP	30 u	**BG7430**
96 square well - 0,7 ml PP - Flat Bottom	50 u	**CD2210**
96 square well - 1,5 ml PP - Flat Bottom	50 u	**CD9810**
Universal lid - Robotic - Polystyrene - 127,8 x 85,5 mm	100 u	**BU4410**
Universal lid - Polystyrene - 127 x 84,7 mm	100 u	**BV0090**
Reservoir Baffle 105,7 x 69,7 mm	10 u	**CA2280**
Low Profile - PP - Flat Bottom	25 u	**BM4550**
Uptiplate solvent storage - partitioned		
PP - 12 columns - Pyramid Bottom - 4,4 cm height	25 u	**BM8790**
PP - 8 Row - Pyramid Bottom - 4,4 cm height	25 u	**BM8730**
PP - 8 Row - Pyramid Bottom - Low Profile - 1,9 cm height	25 u	**BM8780**
PP - 12 columns - Pyramid Bottom - Low Profile - 1,9 cm height	25 u	**BJ9450**
PP - 12 columns - Pyramid Bottom - Low Profile - 4,4 cm height	25 u	**BJ0870**
PP - 2 x 12 columns - Pyramid Bottom - Low Profile - 1,9 cm height - 3,5 ml max vol.	25 u	**CA2170**
PP - 16 Row - Pyramid Bottom - Low Profile - 1,9 cm height	25 u	**BM8830**
PP - 24 columns - Pyramid Bottom - Low Profile - 1,9 cm height	25 u	**BM8860**
PP - 4 columns + Reservoir equivalent to 20 columns - Pyramid Bottom Low Profile - 1,9 cm height	25 u	**BM8760**
PP - 4 columns - Pyramid Bottom - 73 ml max vol. per well	25 u	**CG7170**


BJ0870


BJ9450


BM8760


BM8790


BM8780

Micro Extraction - UptiTip™

UptiTip™ pipette tips are for the management of very small (0.1 µl) sample volumes and are an excellent alternative to packed cartridges.

UptiTip™ Coated

UptiTip™ coated pipette tips are chemically activated with a range of SPE media for ultra-efficient clean-up of small sample volumes.

Features :

- Faster sample preparation with reduced sample loss
- Maximised surface area-to-sample for ultra-efficient clean-up
- Direct coating removes potential sample contamination from the support
- Sample volumes as small as 0.1 µl
- Available in volumes of : 0.1-10 µl and 10-200 µl

Applications :

- Desalting
- MALDI
- Mass spectroscopy
- Electrophoresis
- Protein purification
- HPCE, HPLC, CEC

UptiTip™ Coated

UptiTip™ Packed

UptiTip™ Packed

UptiTip™ capped tips are filled with a range of activated sorbents for a variety of selectivities. The fine slit on the tip bottom (1-2 µm) allows liquid to pass through whilst chromatographic material (20-30 µm diameter) is retained.

No filter is required so dead volume is minimal.

The UptiTip™ can also be used as centrifugal spin column. Centrifuge adaptors are provided.

Features :

- Faster sample preparation with minimal sample loss
- Sample volumes as small as 0.1 µl
- Available in volumes of : 0.1-10 µl and 10-200 µl

Media	UptiTip™ -Coated* 1-10 µl	UptiTip™ -Coated* 10-200 µl	UptiTip™-Packed* 1-10 µl	UptiTip™-Packed* 10-200 µl
C-18	BI5010	BI5020	BI5270	BI5280
C-08	BI5030	BI5040	BI5290	BI5300
C-04	BI5050	BI5060	BI5310	BI5320
Carbon	BV7460	BV7470	BU3190	BU3210
HILIC	CC6880	CC6890	CH7060	CH7070
HILIC SDS Removal	BI5100	BI5110	BI5390	BI5400
PolyCAT A	BI5120	BI5130	BI5410	BI5420
SDS-Removal	BI5150	BI1130	BI5440	BI5450
TiO_2	BH3750	BH3760	BT3530	BU3630
ZrO_2	BH3730	BH3740	CA8260	BX5810
Affinity Media				
Silica IMAC	BI5170	BI5180	BI5460	BI5470
Ni IMAC	BI5190	BI5200	BI5480	BI5500
Fe	CA8080	CH7580	CA8100	CH7490
Protein A	BI5210	BI5220	BI5510	BI5520
Protein G			BI5540	BI5560
Lectin ConA			BJ3650	BJ3770
Lectin WGA			BJ3780	BJ3790
Trypsin	BH3770	BI5230	BI5570	BI5580
Streptavidin	CH5900			

Upti-trap™ On-line extraction

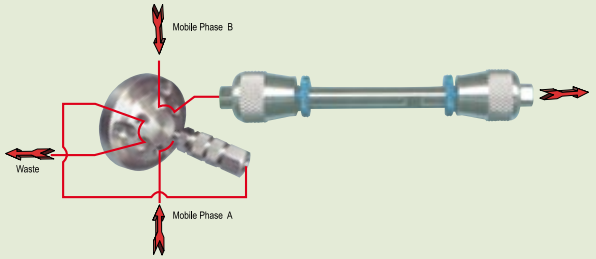
Upti-trap™ ensures extraction and /or sample pre-concentration, prior to HPLC injection.

Upti-trap™ units are available either in 15 x 4.0 mm or 15 x 2.1 mm configurations. The loading capacity for a 15 x 4.0mm unit is approximately 8 to 12 mg whilst the 15 x 2.1 mm unit is approximately 1.5 to 3 mg.

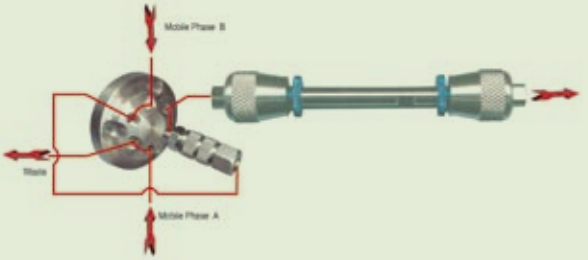
The speed and efficiency of Upti-trap™ make this an excellent device for medicinal research & DMPK Labs whilst Upti-traps™ pre-concentration characteristics make it suitable to environmental applications.

This technique allows for a fast, robust and reproducible method development process that can easily be automated.

1. Extraction mode
The compound of interest is trapped on the sorbent. Impurities are washed by the mobile phase A.



2. Elution mode
The compound of interest is eluted by the mobile phase B.



(This example requires a 6 port - two position valve and two HPLC pumps).

A 10 port, 2 position valve increases productivity as one sample can be extracted while the other is analyzed.

Sorbent	Functionality /comment	Particle size	P/N 15 x 4,0 mm	P/N 15 x 2,1 mm
Upti-clean™ C18	C18 end-capped	50 µm	**U25750**	**U25840**
Upti-clean™ C8	C18 end-capped	50 µm	**BG6090**	**CE0580**
Upti-clean™ RPAQ	C18 100% hydrophile	75 µm	**U25760**	**U25850**
Upti-clean™ NH_2	Amino	50 µm	**BV3700**	**BV3720**
Upti-clean™ SCX	Strong cation exchange	60 µm	**U25770**	**U25860**
Upti-clean™ SAX	Strong anion exchange	60 µm	**BB8650**	**BG6950**
Upti-clean™ MM1	RP / Strong cation exchange	60 µm	**U25780**	**U25870**
Atoll™ XC	Hydrophobic	30 µm	**U70480**	**U70500**
Atoll™ ATH	Hydrophilic	30 µm	**CE0560**	**CE0590**
Atoll™ AEV	Hydrophilic /Hydrophobic	75 µm	**U25820**	**U25910**
Atoll™ ATL	Hydrophobic	75 µm	**U25800**	**U25890**
Atoll™ XWP	Hydrophobic	90 µm	**BU5550**	**BU5560**

Sample Prep - Solid Phase Extraction

United Chemical Technologies (UCT) product guide

CLEAN SCREEN®

Drugs of Abuse Columns
- DAU = Acidic, Basic & Neutral Drugs
- THC = Carboxy THC
- THCA = THC Δ9 Carboxylic Acid
- GHB = Gamma-Hydroxybutyrate
- ETG = Ethyl Glucuronide
- BNZ = Benzodiazepine
- CLEAN-THRU® Tips

CLEAN-UP®

Solid Phase Extraction Columns
- Ion Exchange
- Hydrophobic
- Hydrophilic
- Copolymeric
- Covalent

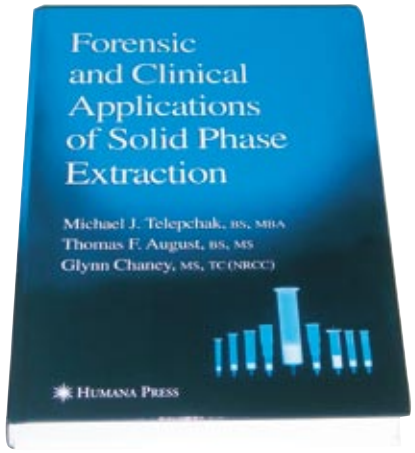
STYRE SCREEN®

Polymeric Based Columns
- DBX = Copolymeric
- DVB = Divinylbenzene
- BCX = Benzenesulfonic Acid
- C18 = Octadecyl C18
- CCX = Carboxylic Acid
- QAX = Quaternary Amine

ENVIRO-CLEAN®

- Products
- Environmental SPE Cartridge
- SPE Inert Glass Syringe Barrels

First of its kind in the field of forensic and clinical toxicology !

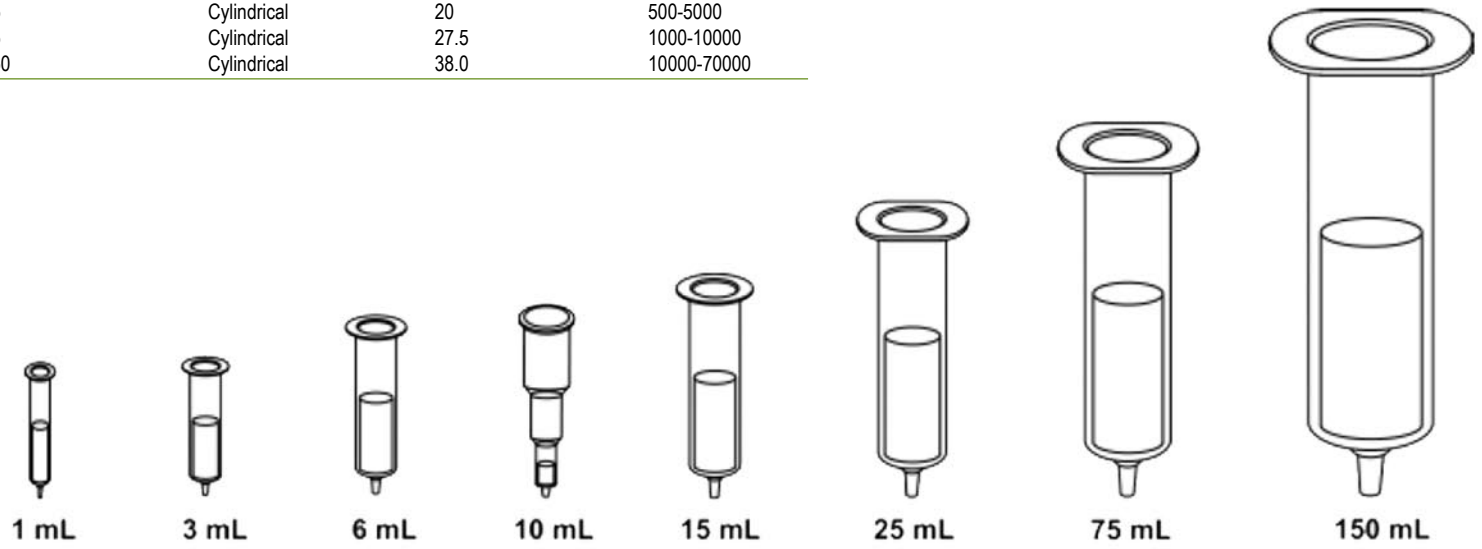


The recently published Forensic and Clinical Applications of Solid Phase Extraction, by Michael J. Telepchak, Thomas August and Glynn Chaney, has been met with enthusiasm by those in the SPE field, and has been recommended as a valuable laboratory reference. Dr. Terry Danielson, Ph.D., who reviewed the book for the American Society of Crime Laboratory Directors, calls attention to the "extensive details of many currently available SPE separation procedures", and describes the book as a convenient compendium of SPE technology, and is relevant to the development, implementation and practice of modern SPE appropriate to students, and experienced practitioners."
In the Canadian Society of Forensic Science Journal, Dr. Karen Woodall, Ph.D., of the Toronto Centre of Forensic Sciences, calls the book a "must read" for anyone interested in SPE, especially helpful in resolving the day-to-day problems that can occur when using [SPE] and gives some excellent examples of how to deal with some of these occurrences such as recovery variability, contamination, flow, and non-extraction problems."

BOOK "FORENSIC AND CLINICAL APPLICATIONS OF SOLID PHASE EXTRACTION"
P/N : ZZ3801

Reservoirs for Bonded Phase Extractions

Stated Volume (mL)	Tube Configuration	Bed Diameter (mm)	Sorbent Mass (mg)
1	Cylindrical	5.5	50-200
3	Cylindrical	8.5	50-1000
6	Cylindrical	12.5	200-2000
10	Expanded	8.5	50-1000
15	Cylindrical	15.5	500-2000
25	Cylindrical	20	500-5000
75	Cylindrical	27.5	1000-10000
150	Cylindrical	38.0	10000-70000



Copolymeric bonded phases for drug abuse testing

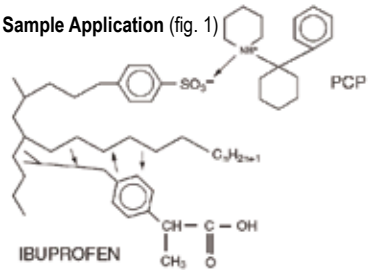
Analytical demand for more efficient, robust and clean extraction of drugs from biological matrices led to the development of Clean Screen® sorbents. Since 1986, Clean Screen® has led the industry with dependable and reproducible Solid Phase Extraction products and applications. Clean Screen phases are true copolymeric sorbents that contain hydrophobic and ion exchange functional groups uniquely polymerized to a silica substrate. The design and quality of Clean Screen provides superior sample clean up, recovery and reproducibility.

Mixed mode separations allow maximum selectivity for extraction of acids, neutrals and bases. This selectivity makes Clean Screen ideal for both screening and confirmation analysis for virtually all drug categories. Clean Screen DAU, THC, and GHB columns are used extensively by forensic and clinical chemists including :

- Post Mortem Investigations
- Criminal Investigations
- Urine Drug Testing
- Athletic Drug Testing
- Racing Laboratories
- Therapeutic Drug Monitoring
- Medical Drug Screening

Recent additions to this product line include Clean Screen® Ethyl Glucuronide and Clean Screen® Benzodiazepines.

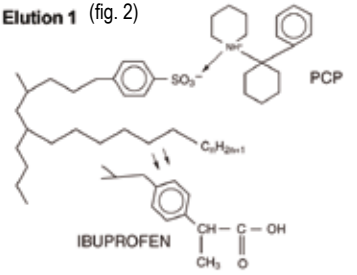
Sample Application (fig. 1)



Mechanism of Clean Screen®

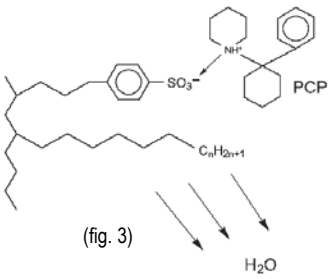
Carboxylic acid functionalities present in the sample are ionized. This creates a repulsion between the column and many sample borne interferences, thereby reducing the likelihood of their adsorbing onto the column.
At this pH, ibuprofen & barbiturates are not ionized and are hydrophobically adsorbed onto the column (figure 1). At the same time, drugs with amine functionalities such as cocaine and phencyclidine adsorb onto the column via both hydrophobic and ionic attraction (fig. 1).

Elution 1 (fig. 2)



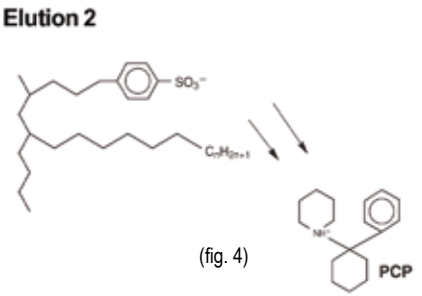
The column can then be washed with water or weak aqueous buffers at or below pH 6 without risking loss of the analytes. After drying the column, it is possible to elute the hydrophobically bound analytes using solvents of minimal polarity such as methylene chloride or a hexane/ethyl acetate mixture (fig. 2). Cationic analytes will remain bound to the column. Many compounds of intermediate polarity and potential interferences will also remain on the column. The majority of these potential interferences can be removed by using a methanol wash.

Cationic analytes bound to the column can be eluted after another drying step. The drying steps are necessary to remove water which would have prevented the water-immiscible elution solvents from optimally interacting with the analytes (fig. 3).



(fig. 3)

To elute the cationic analytes, an organic solution with a high pH (between 11 & 12) should be used. A methylene chloride isopropanol-ammonium hydroxide mixture will simultaneously disrupt these ionic interactions and successfully elute the desired compound (fig. 4).



(fig. 4)

Clean Screen® DAU

This column is copolymerized on a rigid, purified silica gel support. The two functional groups include a reverse phase, and an ion exchanger, benzenesulfonic acid. This column is commonly used for analyzing a wide range of drugs of abuse, including acidic, basic & neutral drugs.
Application : Dual functionality for weak bases and hydrophobic compounds.

P/N	Weight /Vol.	Qty
CSDAU131	130 mg/1 mL	100
CSDAU133	130 mg/3 mL	50
CSDAU203	200 mg/3 mL	50
CSDAU303	300 mg/3 mL	50
CSDAU503	500 mg/3 mL	50
CSDAU206	200 mg/6 mL	50
CSDAU506	500 mg/6 mL	50
CSDAU1M6	1 g/6 mL	30
ZSDAU005	50 mg/10 mL	50
ZSDAU013	130 mg/10 mL	50
ZSDAU020	200 mg/10 mL	50
CSDAU515	500 mg/15 mL	50

Clean Screen® THC

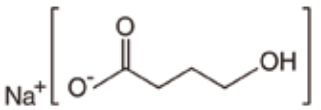
This column is copolymerized on a rigid, purified silica gel support. The two functional groups include a reverse phase, and an ion exchanger, primary amine. This column is commonly used for analyzing THC and its metabolites.
Application : Dual functionality for acids and hydrophobic compounds.

P/N	Weight /Vol.	Qty
CSTHC131	130 mg/1 mL	100
CSTHC203	200 mg/3 mL	50
CSTHC303	300 mg/3 mL	50
CSTHC503	500 mg/3 mL	50
CSTHC206	200 mg/6 mL	50
CSTHC506	500 mg/6 mL	50
CSTHC1M6	1 g/6 mL	30
ZSTHC013	130 mg/10 mL	50
ZSTHC020	200 mg/10 mL	50
CSTHC515	500 mg/15 mL	50

Clean Screen® GHB

The small polar nature of the molecule and the lack of a UV chromatophore complicate the chromatographic and spectrophotometric analysis of GHB. Chemically, GHB is unstable and readily forms Gamma-butyrolactone when heated in acid conditions. Most analytical methods are based upon the interconversion to the lactone and chemical derivatization to form the TMS derivative. This column is for the extraction of free GHB.

P/N	Weight /Vol.	Qty
CSGHB203	200 mg/3 mL	50
ZSGHB020	200 mg/10 mL	50
ZCGHB020	200 mg/10 mL	50



Sample Prep - Solid Phase Extraction

UCT Clean-Up® columns

Hydrophobic Extraction Columns

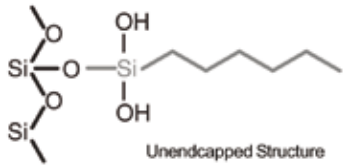
This sorbent is composed of a silica backbone bonded with hydrocarbon chains. It is used to extract compounds which exhibit non-polar or neutral characteristics out of complex matrices. The C18 phase is the most widely used for non-polar interactions because of its nonselective nature; C18 will extract a large number of compounds with differing chemical properties. To enchance selectivity, UCT offers a wide range of hydrophobic sorbents, from C2 to C20. Multiple chain configurations are available for some sorbents. Endcapped or unendcapped sorbents are available for all chain lengths.

Mechanism of hydrophobic bonding

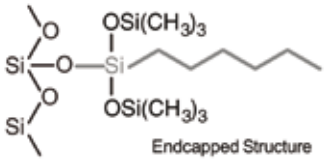
Compounds are retained by non-polar interactions from polar solvents or matrix environments. They are bound by dispersion forces / van der Waals forces. Elution, or disruption of the non-polar interactions is achieved by solvents or solvent mixtures with sufficient non-polar character. Some polar solvents, such as acetonitrile have enough non-polar characteristics to disrupt non-polar binding to cause elution of a compound from the sorbent. Methanol can be used as well, although it should be noted that it will take off both polar & non-polar analytes of interest & interferences.

Unendcapped vs. Endcapped

Bonded phases are manufactured by the reaction of organosilanes with activated silica. During the polymerization reaction of carbon chains to the silica backbone, a very stable silyl ether linkage forms. Our unendcapped columns allow hydroxyl sites to remain, thus making these columns slightly hydrophilic. In order to decrease this slight polarity, these hydroxyl sites are deactivated. Proprietary bonding techniques ensure that these sites are 100% reacted, leading to a complete endcapping. Because there are no hydroxyl sites left, our endcapped columns are more hydrophobic than our unendcapped columns.

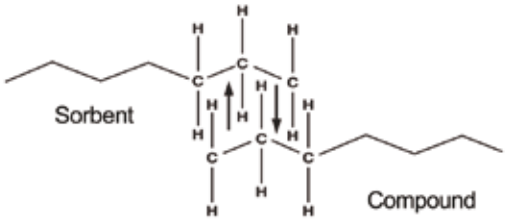


Unendcapped Structure



Endcapped Structure

Example of Hydrophobic Bonding



Functionalized hydrophobic silica based phases

Sorbent	Product code	Structure	% Carbon
C2 ethyl	C02	-SiCH2CH3	6.60
C3 propyl	C03	-Si-(CH2)2CH3	7.60
C4 n-butyl	Cn4	-Si-(CH2)3CH3	8.50
Ci4 isobutyl	Ci4	-Si-CH2CH(CH3)	8.80
Ct4 tertiary butyl	Ct4	-Si-C(CH3)3	8.50
C5 pentyl	C05	-Si-(CH2)4CH3	9.50
C6 hexyl	C06	-Si-(CH2)5CH3	11.00
C7 heptyl	C07	-Si-(CH2)6CH3	11.00
C8 octyl	C08	-Si-(CH2)7CH3	11.10
C10 decyl	C10	-Si-(CH2)9CH3	15.70
C12 dodecyl	C12	-Si-(CH2)11CH3	not tested
C18 octadecyl	C18	-Si-(CH2)17CH3	21.70
C20 eicosyl	C20	-Si-(CH2)19CH3	24.30
C30 tricontyl	C30	-Si-(CH2)29CH3	26.00
Cyclohexyl	CYH1	-Si-(CH)	11.60
Phenyl	PHY1	-Si-(PH)	11.00

UCT Clean-Up® columns

Weight/Vol.	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Qty
50mg/1mL	C2, Ethyl	CEC021L1	CUC021L1	C4, n-Butyl*	CECN41L1	CUCN41L1	C6, Hexyl	CEC061L1	CUC061L1	100
100mg/1mL		CEC02111	CUC02111		CECN4111	CUCN4111		CEC06111	CUC06111	100
100mg/3mL		CEC02113	CUC02113		CECN4113	CUCN4113		CEC06113	CUC06113	50
200mg/3mL		CEC02123	CUC02123		CECN4123	CUCN4123		CEC06123	CUC06123	50
500mg/3mL		CEC02153	CUC02153		CECN4153	CUCN4153		CEC06153	CUC06153	50
500mg/6mL		CEC02156	CUC02156		CECN4156	CUCN4156		CEC06156	CUC06156	50
1g/6mL		CEC021M6	CUC021M6		CECN41M6	CUCN41M6		CEC061M6	CUC061M6	30
100mg/10mL		CEC0211Z	CUC0211Z		CECN411Z	CUCN411Z		CEC0611Z	CUC0611Z	50
200mg/10mL		CEC0212Z	CUC0212Z		CECN412Z	CUCN412Z		CEC0612Z	CUC0612Z	50
500mg/10mL		CEC0215Z	CUC0215Z		CECN415Z	CUCN415Z		CEC0615Z	CUC0615Z	50
50mg/1mL	C3, Propyl	CECN31L1	CUCN31L1	C5, Pentyl	CEC051L1	CUC051L1	C7, Heptyl	CEC071L1	CUC071L1	100
100mg/1mL		CECN3111	CUCN3111		CEC05111	CUC05111		CEC07111	CUC07111	100
100mg/3mL		CECN3113	CUCN3113		CEC05113	CUC05113		CEC07113	CUC07113	50
200mg/3mL		CECN3123	CUCN3123		CEC05123	CUC05123		CEC07123	CUC07123	50
500mg/3mL		CECN3153	CUCN3153		CEC05153	CUC05153		CEC07153	CUC07153	50
500mg/6mL		CECN3156	CUCN3156		CEC05156	CUC05156		CEC07156	CUC07156	50
1g/6mL		CECN31M6	CUCN31M6		CEC051M6	CUC051M6		CEC071M6	CUC071M6	30
100mg/10mL		CECN311Z	CUCN311Z		CEC0511Z	CUC0511Z		CEC0711Z	CUC0711Z	50
200mg/10mL		CECN312Z	CUCN312Z		CEC0512Z	CUC0512Z		CEC0712Z	CUC0712Z	50
500mg/10mL		CECN315Z	CUCN315Z		CEC0515Z	CUC0515Z		CEC0715Z	CUC0715Z	50

*Available on request C4 Isobutyl and C4 Tertiary Butyl

Weight/Vol.	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Qty
50mg/1mL	C8, Octyl	CEC081L1	CUC081L1	C12, nDodecyl	CEC121L1	CUC121L1	Cyclohexyl	CECYH1L1	CUCYH1L1	100
100mg/1mL		CEC08111	CUC08111		CEC12111	CUC12111		CECYH111	CUCYH111	100
100mg/3mL		CEC08113	CUC08113		CEC12113	CUC12113		CECYH113	CUCYH113	50
200mg/3mL		CEC08123	CUC08123		CEC12123	CUC12123		CECYH123	CUCYH123	50
500mg/3mL		CEC08153	CUC08153		CEC12153	CUC12153		CECYH153	CUCYH153	50
500mg/6mL		CEC08156	CUC08156		CEC12156	CUC12156		CECYH156	CUCYH156	50
1g/6mL		CEC081M6	CUC081M6		CEC121M6	CUC121M6		CECYH1M6	CUCYH1M6	30
100mg/10mL		CEC0811Z	CUC0811Z		CEC1211Z	CUC1211Z		CECYH11Z	CUCYH11Z	50
200mg/10mL		CEC0812Z	CUC0812Z		CEC1212Z	CUC1212Z		CECYH12Z	CUCYH12Z	50
500mg/10mL		CEC0815Z	CUC0815Z		CEC1215Z	CUC1215Z		CECYH15Z	CUCYH15Z	50
50mg/1mL	C10, nDecyl	CEC101L1	CUC101L1	C18, Octadecyl	CEC181L1	CUC181L1	Phenyl	CEPHY1L1	CUPHY1L1	100
100mg/1mL		CEC10111	CUC10111		CEC18111	CUC18111		CEPHY111	CUPHY111	100
100mg/3mL		CEC10113	CUC10113		CEC18113	CUC18113		n.a.	n.a.	50
200mg/3mL		CEC10123	CUC10123		CEC18123	CUC18123		CEPHY123	CUPHY123	50
500mg/3mL		CEC10153	CUC10153		CEC18153	CUC18153		CEPHY153	CUPHY153	50
500mg/6mL		CEC10156	CUC10156		CEC18156	CUC18156		CEPHY156	CUPHY156	50
1g/6mL		CEC101M6	CUC101M6		CEC181M6	CUC181M6		CEPHY1M6	CUPHY1M6	30
100mg/10mL		CEC1011Z	CUC1011Z		CEC1811Z	CUC1811Z		CEPHY11Z	CUPHY11Z	50
200mg/10mL		CEC1012Z	CUC1012Z		CEC1812Z	CUC1812Z		CEPHY12Z	CUPHY12Z	50
500mg/10mL		CEC1015Z	CUC1015Z		CEC1815Z	CUC1815Z		CEPHY15Z	CUPHY15Z	50

Hydrophilic Normal Phase Columns

This sorbent is composed of a silica backbone bonded with carbon chains containing polar functional groups. Groups which will possess such polarity include amines, hydroxyls and carbonyls.

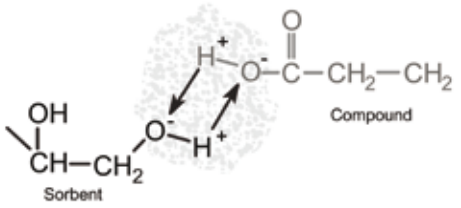
Functionalized hydrophilic silica based phases

Sorbent	Product code	Structure	% Carbon
Silica	SIL1	-SiOH	N/A
Diol	DOL1	-Si-(CH2)3OCH2CHOHCH2OH	8.00
Cyanopropyl	CNP1	-Si-(CH2)3CN	6.90
Florisil®	FLS		N/A
Alumina, Acidic	ALA		N/A
Alumina, Neutral	ALN		N/A
Alumina, Basic	ALB		N/A
Carbon	CARB		N/A

Mechanism of hydrophilic bonding

Compounds are retained on hydrophilic sorbents through polar interactions including hydrogen bonding, pi-pi or dipole-dipole interaction. These types of interactions occur when a distribution of electrons between individual atoms in functional groups is unequal, causing negative and positive polarity. Compounds typically extracted on a hydrophilic column include analytes which have polar groups, including amines, hydroxyls and carbonyls. Elution is performed by strong polar solvents.

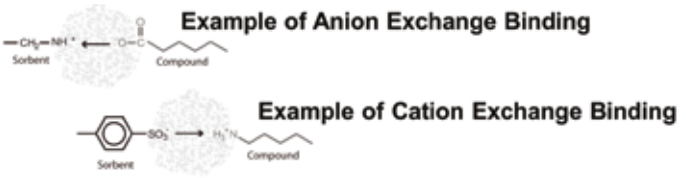
Example of Hydrophilic Bonding



Weight /Vol.	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Qty
50mg/1mL	Unbonded	**CUSIL1L1**	Florisil®	**CUFLS1L1**	Alumina,	**CUALA1L1**	Alumina,	**CUALB1L1**	100
100mg/1mL	Silica	**CUSIL111**		**CUFLS111**	Acidic	**CUALA111**	Basic	**CUALB111**	100
200mg/3mL		**CUSIL123**		**CUFLS123**		**CUALA123**		**CUALB123**	50
500mg/3mL		**CUSIL153**		**CUFLS153**		**CUALA153**		**CUALB153**	50
500mg/6mL		**CUSIL156**		**CUFLS156**		**CUALA156**		**CUALB156**	50
1g/6mL		**CUSIL1M6**		**CUFLS1M6**		**CUALA1M6**		**CUALB1M6**	30
100mg/10mL		**CUSIL11Z**		**CUFLS11Z**		**CUALA11Z**		**CUALB11Z**	50
200mg/10mL		**CUSIL12Z**		**CUFLS12Z**		**CUALA12Z**		**CUALB12Z**	50
500mg/10mL		**CUSIL15Z**		**CUFLS15Z**		**CUALA15Z**		**CUALB15Z**	50
50mg/1mL	Alumina,	**CUALN1L1**	CN,	**CECNP1L1**	CN,	**CUCNP1L1**	Diol	**CUDOL1L1**	100
100mg/1mL	neutral	**CUALN111**	Cyanopropyl	**CECNP111**	Cyanopropyl	**CUCNP111**		**CUDOL111**	100
200mg/3mL		**CUALN123**	Endcapped	**CECNP123**	Unendcapped	**CUCNP123**		**CUDOL123**	50
500mg/3mL		**CUALN153**		**CECNP153**		**CUCNP153**		**CUDOL153**	50
500mg/6mL		**CUALN156**		**CECNP156**		**CUCNP156**		**CUDOL156**	50
1g/6mL		**CUALN1M6**		**CECNP1M6**		**CUCNP1M6**		**CUDOL1M6**	30
100mg/10mL		**CUALN11Z**		**CECNP11Z**		**CUCNP11Z**		**CUDOL11Z**	50
200mg/10mL		**CUALN12Z**		**CECNP12Z**		**CUCNP12Z**		**CUDOL12Z**	50
500mg/10mL		**CUALN15Z**		**CECNP15Z**		**CUCNP15Z**		**CUDOL15Z**	50

Ion Exchange extraction columns

This sorbent is composed of a silica backbone bonded with a carbon chain terminated by a negatively or positively charged functional group. Ion exchange interactions occur between a sorbent that carries a charge and a compound of opposite charge. This electrostatic interaction is reversible by neutralizing the sorbent and/or analyte. Ion exchange bonds can also be disrupted by introduction of a "counter ion" to compete with the analyte for binding sites on the sorbent.



Sorbent	Code	Structure	Pka	% Carbon	meq /g
Aminopropyl (1° amine)	NAX1	-Si-(CH2)3NH2	9.8	6.65	0.310
N-2 Aminoethyl (1° & 2° amine)	PSA1	-Si-(CH2)3NH(CH2)2NH2	10.1, 10.9	9.70	0.320
Diethylamino (3° amine)	DAX1	-Si-(CH2)3N(CH2CH3)2	10.6	8.40	0.280
Quaternary Amine Chloride	QAX1	-Si-(CH2)3N+(CH3)3 Cl-	always charged	8.40	0.250
Quaternary Amine Hydroxide	CHQAX1	-Si-(CH2)3N+(CH3)3 CH3CO2-	always charged	8.40	0.250
Quaternary Amine Acetate	CAQAX1	-Si-(CH2)3N+(CH3)3 OH-	always charged	8.40	0.250
Quaternary Amine Formate	CFQAX1	-Si-(CH2)3N+(CH3)3 CHO2-	always charged	8.40	0.250
Cation Exchange					
Carboxylic Acid	CCX1	-Si-CH2COOH	4.8	9.10	0.170
Propylsulfonic Acid	PCX1	-Si-(CH2)3SO3H	<1	7.10	0.180
Benzenesulfonic Acid	BCX1	-Si-(CH2)2-(PH)-SO3H	always charged	11.00	0.320
Benzenesulfonic Acid High Load	BCXHL1	-Si-(CH2)2-(PH)-SO3H	always charged	15.00	0.650

Mechanism of Ion Exchange bonding

Compounds are retained on the sorbent through ionic bonds. Therefore, it is essential that the sorbent and the analyte to be extracted are charged. Generally, the number of molecules with charged cationic groups increases at pH values below the molecules pKa value. The number of molecules with charged anionic groups decreases at pH values below the molecule's pKa value. To ensure 99% or more ionization, the pH should be at least two pH units below the pKa of the cation and two pH units above the pKa of the anion. Elution occurs by using a solvent to raise the pH above the pKa of the cationic group or to lower the pH below the pKa of the anion to disrupt retention. At this point, the sorbent or compound will be neutralized.

Weight /Vol.	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Qty
50mg/1mL	Aminopropyl	**CUNAX1L1**	"PSA	**CUPSA1L1**	Diethylamino	**CUDAX1L1**	"Quaternary	**CUQAX1L1**	100
100mg/1mL		**CUNAX111**	N-2 Aminoethyl"	**CUPSA111**		**CUDAX111**	Amine	**CUQAX111**	100
200mg/3mL		**CUNAX123**		**CUPSA123**		**CUDAX123**	with Chloride	**CUQAX123**	50
500mg/3mL		**CUNAX153**		**CUPSA153**		**CUDAX153**	Counter Ion**"	**CUQAX153**	50
500mg/6mL		**CUNAX156**		**CUPSA156**		**CUDAX156**		**CUQAX156**	50
1g/6mL		**CUNAX1M6**		**CUPSA1M6**		**CUDAX1M6**		**CUQAX1M6**	30
100mg/10mL		**CUNAX11Z**		**CUPSA11Z**		**CUDAX11Z**		**CUQAX11Z**	50
200mg/10mL		**CUNAX12Z**		**CUPSA12Z**		**CUDAX12Z**		**CUQAX12Z**	50
500mg/10mL		**CUNAX15Z**		**CUPSA15Z**		**CUDAX15Z**		**CUQAX15Z**	50
50mg/1mL	Carboxylic	**CUCCX1L1**	Propyl	**CUPCX1L1**	Benzene-	**CUBCX1L1**	Benzene-	**CUBCX1H1L1**	100
100mg/1mL	Acid	**CUCCX111**	sulfonic	**CUPCX111**	-sulfonic	**CUBCX111**	-sulfonic	**CUBCX1HL11**	100
200mg/3mL		**CUCCX123**	Acid	**CUPCX123**	Acid	**CUBCX123**	Acid High	**CUBCX1HL23**	50
500mg/3mL		**CUCCX153**		**CUPCX153**		**CUBCX153**	Load	**CUBCX1HL53**	50
500mg/6mL		**CUCCX156**		**CUPCX156**		**CUBCX156**		**CUBCX1HL56**	50
1g/6mL		**CUCCX1M6**		**CUPCX1M6**		**CUBCX1M6**		**CUBCX1HLM6**	30
100mg/10mL		**CUCCX11Z**		**CUPCX11Z**		**CUBCX11Z**		**CUBCX1HL1Z**	50
200mg/10mL		**CUCCX12Z**		**CUPCX12Z**		**CUBCX12Z**		**CUBCX1HL2Z**	50
500mg/10mL		**CUCCX15Z**		**CUPCX15Z**		**CUBCX15Z**		**CUBCX1HL5Z**	50

**Available with Acetate , Hydroxide & Formate Counter Ion

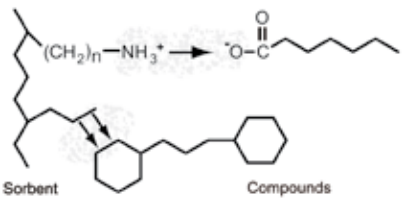
Copolymeric Extraction columns
(ion Exchange + hydrophobicity)

This sorbent is composed of a silica backbone with two types of functional chains attached - an ion exchanger or polar chain and a hydrophobic carbon chain. Our copolymeric phases are produced in a way to allow for equal parts of each functional group to attach to the silica backbone. This copolymerization technique yields reproducible bonded phases and unique copolymeric chemistries which allow the controlled use of mixed mode separation mechanisms. This type of dual chemistry is beneficial especially when one is looking for both a neutral & charged compound. This is common when a neutral parent drug metabolizes and becomes a charged compound.

Functionalized mixed mode silica based phases

Sorbent	Product code	Structure	% Carbon	meq/g
Aminopropyl + C8	NAX2	-Si-(CH2)3NH2 & -Si-(CH2)7CH3	12.3	0.163
Quaternary Amine + C8	QAX2	-Si-(CH2)3N+(CH3)3 & -Si-(CH2)7CH3	13.60	0.160
Carboxylic Acid + C8	CCX2	-Si-CH2COOH & -Si-(CH2)7CH3	12.50	0.105
Propylsulfonic Acid + C8	PCX2	-Si-(CH2)3SO3H & -Si-(CH2)7CH3	14.62	0.114
Benzenesulfonic Acid + C8	BCX2	-Si-(CH2)2-(PH)-SO3H & -Si-(CH2)7CH3	12.30	0.072
Cyanopropyl + C8	CNP2	-Si-(CH2)3CN & -Si-(CH2)7CH3	14.60	0.163
Cyclohexyl + C8	CYH2	-Si-(PH) & -Si-(CH2)7CH3	N/A	N/A

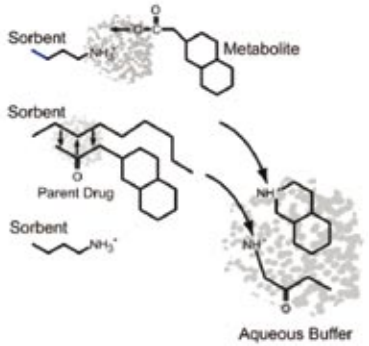
Example of Copolymeric Bonding



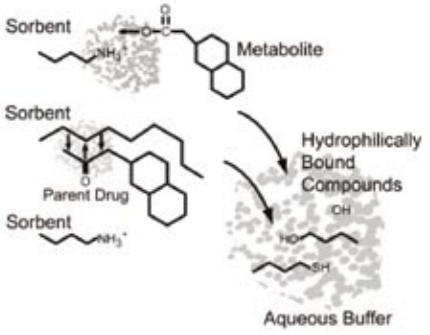
Mechanism of mixed mode bonding

Using a sample composed of a theoretical neutral parent drug and its charged (acidic) metabolite, it is applied at a pH of 6 (figure 1). At this pH, many amine groups are positively charged. Since the column is also positively charged, compounds with this chemistry (cations) are repelled. Depending on the pKa of the metabolite, carboxylic acid groups may be negatively charged, allowing the metabolite to bond to the positively charged sorbent. Since the column also possesses a hydrophobic chain, the neutral parent drug also bonds to the column. Water or a weak aqueous buffer (pH6) washes away hydrophilically bound interferences (figure 2). The column is then dried, careful to free the column of any residual aqueous phase that would interfere with elution.

Sample Application (Figure 1)

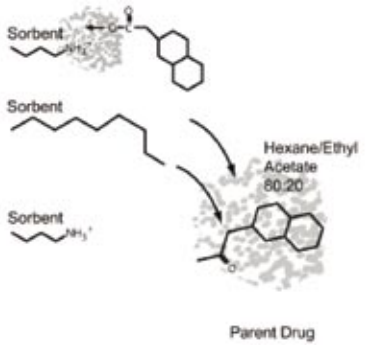


Column Wash (Figure 2)

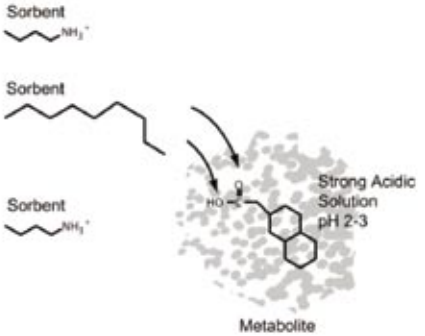


UCT Clean-Up® columns

Elution 1
(Figure 3)
The hydrophobically bound neutral parent drug is eluted with a solvent of minimal polarity, such as hexane/ethyl acetate - 80:20.



Elution 2
(Figure 4)
The final elution employs an acid to neutralize the charge of acidic analytes. Ionic interaction is released, and analytes are eluted in an appropriate solvent mixture.



Weight /Vol.	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Qty
50 mg/1 mL	Hydrophobic	**CUPCX2L1**	Hydrophobic	**CUCCX2L1**	Hydrophobic	**CUBCX2L1**	Octadecyl	**CUBCX3L1**	100
100 mg/1 mL	plus	**CUPCX211**	plus	**CUCCX211**	plus	**CUBCX211**	plus	**CUBCX311**	100
200 mg/3 mL	Propylsulfonic	**CUPCX223**	Carboxylic	**CUCCX223**	Benzene-	**CUBCX223**	Benzene-	**CUBCX323**	50
500 mg/3 mL	Acid	**CUPCX253**	Acid	**CUCCX253**	-sulfonic	**CUBCX253**	-sulfonic	**CUBCX353**	50
500 mg/6 mL		**CUPCX256**		**CUCCX256**	Acid	**CUBCX256**	Acid	**CUBCX356**	50
1 g/6 mL		**CUPCX2M6**		**CUCCX2M6**		**CUBCX2M6**		**CUBCX3M6**	30
100 mg/10 mL		**CUPCX21Z**		**CUCCX21Z**		**CUBCX21Z**		**CUBCX31Z**	50
200 mg/10 mL		**CUPCX22Z**		**CUCCX22Z**		**CUBCX22Z**		**CUBCX32Z**	50
500 mg/10 mL		**CUPCX25Z**		**CUCCX25Z**		**CUBCX25Z**		**CUBCX35Z**	50
50 mg/1 mL	Hydrophobic	**CUPSA2L1**	Octadecyl	**CUPSA3L1**	Hydrophobic	**CUQAX2L1**	Hydrophobic	**CUNAX2L1**	100
100 mg/1 mL	plus	**CUPSA211**	plus	**CUPSA311**	plus	**CUQAX211**	plus	**CUNAX211**	100
200 mg/3 mL	N-2	**CUPSA223**	N-2	**CUPSA323**	Quaternary	**CUQAX223**	Aminopropyl	**CUNAX223**	50
500 mg/3 mL	Aminoethyl	**CUPSA253**	Aminoethyl	**CUPSA353**	Amine	**CUQAX253**		**CUNAX253**	50
500 mg/6 mL		**CUPSA256**		**CUPSA356**		**CUQAX256**		**CUNAX256**	50
1 g/6 mL		**CUPSA2M6**		**CUPSA3M6**		**CUQAX2M6**		**CUNAX2M6**	30
100 mg/10 mL		**CUPSA21Z**		**CUPSA31Z**		**CUQAX21Z**		**CUNAX21Z**	50
200 mg/10 mL		**CUPSA22Z**		**CUPSA32Z**		**CUQAX22Z**		**CUNAX22Z**	50
500 mg/10 mL		**CUPSA25Z**		**CUPSA35Z**		**CUQAX25Z**		**CUNAX25Z**	50

Sample Prep - Solid Phase Extraction

UCT Styre Screen® Polymeric Resign columns

Styre Screen® extraction columns contain an ultra clean, highly cross-linked styrene and divinylbenzene copolymer sorbent that is functionalized with both a reverse phase, hydrophobic component and a strong cation exchanger. High & reproducible recoveries for acidic, neutral and basic compounds are achievable with a single column. The Styre Screen® particles have an average particle size of 30 microns and a very high analyte capacity making them ideal for standard solid phase extraction applications. The increased analyte capacity means that less sorbent bed mass is needed which results in faster flow rates and less solvent use. Higher throughput and less solvent waste disposal translate into significant savings in both time and money. In addition, no conditioning steps are required for most drugs of abuse applications.

Advantage

- No conditioning steps
- Copolymer allows for extraction of acids, neutrals and bases
- High and reproducible recoveries
- Clean extractions
- Highly cross-linked styrene/divinylbenzene polymer
- Reduction in sorbent mass
- Faster flow rates
- pH stable (1 to 14)
- Reduction in solvent use
- High sorbent capacity
- Methods for NIDA/SAMHSA 5 Drugs

Weight /Vol.	Sorbent	P/N	Application	Qty
30 mg/1 mL	DBX - Benzenesulfonic	**SSDBX031**	Dual functionality for weak	100
30 mg/3 mL	Acid + C18	**SSDBX033**	acids and	50
50 mg/6 mL		**SSDBX056**	hydrophobic compounds.	50
30 mg/1 mL	DVB - Polystyrene	**SSDBX031**	n.a.	100
30 mg/3 mL	Divinylbenzene	**SSDBX033**	n.a.	50
50 mg/6 mL		**SSDBX056**	n.a.	50
30 mg/1 mL	BCX - Reverse Phase	**SSBCX031**	Scavenger for amines,	100
30 mg/3 mL		**SSBCX033**	alcohols and other	50
50 mg/6 mL		**SSBCX056**	nucleophiles.	50
30 mg/1 mL	C18 -Reverse Phase	**SSC18031**	Removes hydrophobic impurities,	100
30 mg/3 mL		**SSC18033**	de-salting and purification of	50
50 mg/6 mL		**SSC18056**	hydrophobic compounds.	50
30 mg/1 mL	CCX - Carboxylic Acid	**SSCCX031**	Scavenger for strong anions	100
30 mg/3 mL		**SSCCX033**	(Quaternary amines or metals)	50
50 mg/6 mL		**SSCCX056**		50
30 mg/1 mL	QAX - Quaternary Amine	**SSQAX031**	"Removes large or more	100
30 mg/3 mL		**SSQAX033**	hydrophobic compounds."	50
50 mg/6 mL		**SSQAX056**		50

UCT Enviro-Clean® - Universal cartridges

The Enviro-Clean® Universal Cartridge is the choice of modern contract labs. This inexpensive, easy to use cartridge provides consistent extractions with clean blanks. Built in flow control allows for consistent flow rates. Enviro-Clean® sorbents UCT polypropylene, and PTFE frits offer a clean blank with every batch. Designed for the environmental lab, the cartridge is made to handle large volumes of waste water. An optional bottle holder is available for continuous feed from Boston Round and wide mouth bottles.

SPE-DEX® is a registered trademark of Horizon Technology, Inc.

Product Name	P/N	Weight /Vol.	Description / Application	Qty
UNIVERSAL C18	**ECUNIC18**	1100 mg/83 mL	1100 mg of endcapped C18 for pesticides, PCBs and a large assortment of applications.	8
UNIVERSAL 525	**ECUNI525**	1500 mg/83 mL	1500 mg of our special C18 blend. This cartridge is specifically designed for EPA Method 525.	8
UNIVERSAL PAH / DRO	**ECUNIPAH**	2000 mg/83 mL	2000 mg of C18 specifically designed for PAH extraction.	8
UNIVERSAL OIL & GREASE	**ECUNIOAG**	4000 mg/83 mL	4000 mg of large particle C18 with an assortment of PE frit filters. No more liquid/liquid emulsions or clogged disks.	15

The cartridge will fit all standard manifolds and disk manifolds with adapter.

Sample Prep - Solid Phase Extraction

UCT dispersive SPE – "QuEChERS"

Quick, Easy, Cheap, Effective, Rugged and Safe Approach for determining pesticide residues in fruits, vegetables and other foods.

The QuEChERS method is gaining in popularity around the world as the method of choice for food testing. The QuEChERS method offers the advantages of high recoveries, accurate results, high sample throughput, low solvent and glassware usage (no chlorinated solvents), less labor and bench space and lower reagent costs. Organic acids and other potential contaminants are removed during the cleanup process.

UCT provides a variety of QuEChERS products containing primary secondary amine (PSA), C18, magnesium sulfate anhydrous and graphitized carbon black. These products are used in the method's clean-up step. Bulk, pre-cleaned magnesium sulfate anhydrous is available for the extraction part of the method.

PSA is used to remove various polar organic acids, polar pigments, some sugars and fatty acid co-extractables from QuEChERS extracts. Combined with C18, samples containing less than 1% lipids can be cleaned of most lipids and sterols. Graphitized carbon is used to remove sterols and pigments such as chlorophyll. The downside to carbon is its ability to retain planar molecules. Schenck and Vega (April 2001) reported that 3/1 acetone : toluene performed well at eluting many compounds from carbon.

P/N	Description	Qty
CUMPSCB2CT	2 mL micro-centrifuge tubes with 150 mg Anhydrous Magnesium Sulfate,50 mg PSA & 50mg Carbon	100
CUMPS2CT	2 mL micro-centrifuge tubes with 150 mg Anhydrous Magnesium Sulfate, 50 mg PSA	100
CUMPSC18CT	2 mL micro-centrifuge tubes with 150 mg Anhydrous Magnesium Sulfate, 50 mg PSA & 50 mg endcapped C18	100
ECMPSCB15CT	15 mL centrifuge tubes with 900 mg Anhydrous Magnesium Sulfate, 300 mg PSA & 50 mg endcapped C18	50
ECMPSC1815CT	15 mL centrifuge tubes with 900 mg Anhydrous Magnesium Sulfate, 300 mg PSA & 150 mg endcapped C18	50
ECPSACB6	6 mL columns with 400 mg PSA on bottom, 200 mg Graphitized Carbon-Black on top, separated by a Teflon frit*	30
ECPSACB256	6 mL columns with 250 mg Graphitized Carbon on top, 500 mg PSA on the bottom, separated with a Teflon frit*	30
ECPSACB506	6 mL columns with 500 mg Graphitized Carbon on top, 500 mg PSA on the bottom, separated with a Teflon frit*	30
ECMSSA50CT	50 mL PP centrifuge tube with 6 g Anhydrous Magnesium Sulfate, 1.5 g Anhydrous Sodium Acetate	250
ECMSSC50CT	50 mL PP centrifuge tube with 4 g Anhydrous Magnesium Sulfate, 1 g NaCl	250

Example of procedure

1. Transfer 15 g of homogenized sample into a 50 ml FEP centrifuge tube.
2. Add 15 ml of 1% acetic acid in acetonitrile, 1.5 g sodium acetate anhydrous, 6 g of UCT magnesium sulfate anhydrous and an internal standard.
3. Shake vigorously for 1 minute.
4. Centrifuge for 3 minutes at 3700 rpm.
5. Transfer an aliquot of the supernatant to the UCT product.
6. Shake for 1 minute.
7. Centrifuge for 3 minutes at 3700 rpm.
8. Analyze.

* Products available with Polyethylene or Teflon frits. Choice depends application and price requirements.

UCT Enviro-Clean® columns

Polypropylene and Inert Glass Extraction columns

Enviro-Clean® solid phase extraction columns are designed especially for the isolation and separation of environmental analytes such as pesticides, herbicides, polyaromatic hydrocarbons, polychlorinated biphenyls and other environmentally related compounds.

Enviro-Clean® offers a selection of high quality solid phase extraction columns geared to support the environmental chemist with a very broad range of analytical applications. The most important function of the solid phase extraction column for the environmental chemist is the clean separation of an analyte from a variety of compounds. An important function of the extraction column is that it will concentrate a low level of analyte from large samples for accurate analysis. When evaluating analyte extraction or separation, Enviro-Clean® offers nonpolar, polar, ion-exchange and copolymeric phases for application in the environmental laboratory.

Hydrophobic Extraction Columns

Non-polar phases are often referred to as hydrophobic and function by the interactions of the carbon-hydrogen bond of the analyte and the sorbent. C18 is the most widely used of these phases. EPA approved methods for analyzing organics in drinking water specify the C18 hydrophobic phase. This method requires that large sample volumes (liters) be analyzed which utilizes the compound concentration function of the hydrophobic sorbent.

Weight /Vol.	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Qty
50 mg/1 mL	C2, Ethyl	**EEC021L1**	**EUC021L1**	C4, n-Butyl	**EECN41L1**	**EUCN41L1**	C6, Hexyl	**EEC061L1**	**EUC061L1**	100
100 mg/1 mL		**EEC02111**	**EUC02111**		**EECN4111**	**EUCN4111**		**EEC06111**	**EUC06111**	100
200 mg/3 mL		**EEC02123**	**EUC02123**		**EECN4123**	**EUCN4123**		**EEC06123**	**EUC06123**	50
500 mg/3 mL		**EEC02153**	**EUC02153**		**EECN4153**	**EUCN4153**		**EEC06153**	**EUC06153**	50
500 mg/6 mL		**EEC02156**	**EUC02156**		**EECN4156**	**EUCN4156**		**EEC06156**	**EUC06156**	50
1000 mg/6 mL		**EEC021M6**	**EUC021M6**		**EECN41M6**	**EUCN41M6**		**EEC061M6**	**EUC061M6**	30
100 mg/10 mL		**EEC0211Z**	**EUC0211Z**		**EECN411Z**	**EUCN411Z**		**EEC0611Z**	**EUC0611Z**	50
200 mg/10 mL		**EEC0212Z**	**EUC0212Z**		**EECN412Z**	**EUCN412Z**		**EEC0612Z**	**EUC0612Z**	50
500 mg/10 mL		**EEC0215Z**	**EUC0215Z**		**EECN415Z**	**EUCN415Z**		**EEC0615Z**	**EUC0615Z**	50
2000 mg/15 mL		**EEC0212M15**	**EUC0212M15**		**EECN412M15**	**EUCN412M15**		**EEC0612M15**	**EUC0612M15**	20
50 mg/1 mL	C3, Propyl	**EECN31L1**	**EUCN31L1**	C5, Pentyl	**EEC051L1**	**EUC051L1**	C7, Heptyl	**EEC071L1**	**EUC071L1**	100
100 mg/1 mL		**EECN3111**	**EUCN3111**		**EEC0511**	**EUC05111**		**EEC07111**	**EUC07111**	100
200 mg/3 mL		**EECN3123**	**EUCN3123**		**EEC05123**	**EUC05123**		**EEC07123**	**EUC07123**	50
500 mg/3 mL		**EECN3153**	**EUCN3153**		**EEC05153**	**EUC05153**		**EEC07153**	**EUC07153**	50
500 mg/6 mL		**EECN3156**	**EUCN3156**		**EEC05156**	**EUC05156**		**EEC07156**	**EUC07156**	50
1000 mg/6 mL		**EECN31M6**	**EUCN31M6**		**EEC051M6**	**EUC051M6**		**EEC071M6**	**EUC071M6**	30
100 mg/10 mL		**EECN311Z**	**EUCN311Z**		**EEC0511Z**	**EUC0511Z**		**EEC0711Z**	**EUC0711Z**	50
200 mg/10 mL		**EECN312Z**	**EUCN312Z**		**EEC0512Z**	**EUC0512Z**		**EEC0712Z**	**EUC0712Z**	50
500 mg/10 mL		**EECN315Z**	**EUCN315Z**		**EEC0515Z**	**EUC0515Z**		**EEC0715Z**	**EUC0715Z**	50
2000 mg/15 mL		**EECN312M15**	**EUCN312M15**		**EEC0512M15**	**EUC0512M15**		**EEC0712M15**	**EUC0712M15**	20

Sample Prep - Solid Phase Extraction

UCT Enviro-Clean® columns

Hydrophobic Extraction Columns

Weight /Vol.	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Sorbent	Endcapped	Unendcapped	Qty
50 mg/1 mL	C8, Octyl	**EEC081L1**	**EUC081L1**	C12,	**EEC121L1**	**EUC121L1**	Cyclohexyl	**EECYH1L1**	**EUCYH1L1**	100
100 mg/1 mL		**EEC08111**	**EUC08111**	nDodecyl	**EEC12111**	**EUC12111**		**EECYH111**	**EUCYH111**	100
200 mg/3 mL		**EEC08123**	**EUC08123**		**EEC12123**	**EUC12123**		**EECYH123**	**EUCYH123**	50
500 mg/3 mL		**EEC08153**	**EUC08153**		**EEC12153**	**EUC12153**		**EECYH153**	**EUCYH153**	50
500 mg/6 mL		**EEC08156**	**EUC08156**		**EEC12156**	**EUC12156**		**EECYH156**	**EUCYH156**	50
1000 mg/6 mL		**EEC081M6**	**EUC081M6**		**EEC121M6**	**EUC121M6**		**EECYH1M6**	**EUCYH1M6**	30
100 mg/10 mL		**EEC0811Z**	**EUC0811Z**		**EEC1211Z**	**EUC1211Z**		**EECYH11Z**	**EUCYH11Z**	50
200 mg/10 mL		**EEC0812Z**	**EUC0812Z**		**EEC1212Z**	**EUC1212Z**		**EECYH12Z**	**EUCYH12Z**	50
500 mg/10 mL		**EEC0815Z**	**EUC0815Z**		**EEC1215Z**	**EUC1215Z**		**EECYH15Z**	**EUCYH15Z**	50
2000 mg/15 mL		**EEC0812M15**	**EUC0812M15**		**EEC1212M15**	**EUC1212M15**		**EECYH12M15**	**EUCYH12M15**	20
50 mg/1 mL	C10, nDecyl	**EEC101L1**	**EUC101L1**	C18,			Phenyl	**EEPHY1L1**	**EUPHY1L1**	100
100 mg/1 mL		**EEC10111**	**EUC10111**	Octadecyl	**EEC18111**	**EUC18111**		**EEPHY111**	**EUPHY111**	100
200 mg/3 mL		**EEC10123**	**EUC10123**		**EEC18123**	**EUC18123**		**EEPHY123**	**EUPHY123**	50
500 mg/3 mL		**EEC10153**	**EUC10153**		**EEC18153**	**EUC18153**		**EEPHY153**	**EUPHY153**	50
500 mg/6 mL		**EEC10156**	**EUC10156**		**EEC18156**	**EUC18156**		**EEPHY156**	**EUPHY156**	50
1000 mg/6 mL		**EEC101M6**	**EUC101M6**		**EEC181M6**	**EUC181M6**		**EEPHY1M6**	**EUPHY1M6**	30
100 mg/10 mL		**EEC1011Z**	**EUC1011Z**		**EEC1811Z**	**EUC1811Z**		**EEPHY11Z**	**EUPHY11Z**	50
200 mg/10 mL		**EEC1012Z**	**EUC1012Z**		**EEC1812Z**	**EUC1812Z**		**EEPHY12Z**	**EUPHY12Z**	50
500 mg/10 mL		**EEC10115Z**	**EUC1015Z**		**EEC1815Z**	**EUC1815Z**		**EEPHY15Z**	**EUPHY15Z**	50
2000 mg/15 mL		**EEC1012M15**	**EUC1012M15**		**EEC1812M15**	**EUC1812M15**		**EEPHY12M15**	**EUPHY12M15**	20

Hydrophilic Extraction Columns

Polar or hydrophilic phases function by hydrogen bonding, pi-pi and dipole-dipole interaction. Ion exchange interactions occur between the sorbent and the analyte of opposite charge.
Enviro-Clean® sorbents are available in both cation or anion exchangers exhibiting both weak and strong characteristics.
Copolymeric phases offer a new approach to the environmental analyst by providing very clean extracts and high compound recovery. Dual functionalities, hydrophobic plus ion-exchange or polar allow a higher degree of selectivity than was previously possible. Analytes retained by multiple mechanisms can be washed by disrupting only one mechanism. Careful selection of the solvent strength results in a greater removal of chromatographic contamination.

Weight /Vol.	Qty	P/N
50 mg/1 mL	100	**EUCARB1L1**
100 mg/1 mL	100	**EUCARB111**
200 mg/3 mL	50	**EUCARB123**
500 mg/3 mL	50	**EUCARB153**
200 mg/6 mL	50	**EUCARB126**
500 mg/6 mL	50	**EUCARB156**
1000 mg/6 mL	30	**EUCARB1M6**
100 mg/10 mL	50	**EUCARB11Z**
200 mg/10 mL	50	**EUCARB12Z**
500 mg/10 mL	50	**EUCARB15Z**
1000 mg/15 mL	20	**EUCARB1M15**
2000 mg/15 mL	20	**EUCARB12M15**

Carbon-Graphitized

Application : Carbon supports have been used to isolate extremely polar organic compounds. They work by a hydrophobic mechanism with a high surface area and ion exchange. This interaction can happen in a wide range of polar and non-polar solvents.

UCT Enviro-Clean® columns

Weight /Vol.	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Qty
50 mg/1 mL	Unbonded	**EUSIL1L1**	Florisil®	**EUFLS1L1**	Alumina,	**EUALA1L1**	Alumina,	**EUALB1L1**	100
100 mg/1 mL	Silica	**EUSIL111**		**EUFLS111**	Acidic	**EUALA111**	Basic	**EUALB111**	100
200 mg/3 mL		**EUSIL123**		**EUFLS123**		**EUALA123**		**EUALB123**	50
500 mg/3 mL		**EUSIL153**		**EUFLS153**		**EUALA153**		**EUALB153**	50
500 mg/6 mL		**EUSIL156**		**EUFLS156**		**EUALA156**		**EUALB156**	50
1000 mg/6 mL		**EUSIL1M6**		**EUFLS1M6**		**EUALA1M6**		**EUALB1M6**	30
100 mg/10 mL		**EUSIL11Z**		**EUFLS11Z**		**EUALA11Z**		**EUALB11Z**	50
200 mg/10 mL		**EUSIL12Z**		**EUFLS12Z**		**EUALA12Z**		**EUALB12Z**	50
500 mg/10 mL		**EUSIL15Z**		**EUFLS15Z**		**EUALA15Z**		**EUALB15Z**	50
2000 mg/15 mL		**EUSIL12M15**		**EUFLS12M15**		**EUALA12M15**		**EUALB12M15**	20
50 mg/1 mL	Alumina,	**EUALN1L1**	CN,	**EECNP1L1**	CN,	**EUCNP1L1**	Diol	**EUDOL1L1**	100
100 mg/1 mL	neutral	**EUALN111**	Cyanopropyl	**EECNP111**	Cyanopropyl	**EUCNP111**		**EUDOL111**	100
200 mg/3 mL		**EUALN123**	Endcapped	**EECNP123**	Unendcapped	**EUCNP123**		**EUDOL123**	50
500 mg/3 mL		**EUALN153**		**EECNP153**		**EUCNP153**		**EUDOL153**	50
500 mg/6 mL		**EUALN156**		**EECNP156**		**EUCNP156**		**EUDOL156**	50
1000 mg/6 mL		**EUALN1M6**		**EECNP1M6**		**EUCNP1M6**		**EUDOL1M6**	30
100 mg/10 mL		**EUALN11Z**		**EECNP11Z**		**EUCNP11Z**		**EUDOL11Z**	50
200 mg/10 mL		**EUALN12Z**		**EECNP12Z**		**EUCNP12Z**		**EUDOL12Z**	50
500 mg/10 mL		**EUALN15Z**		**EECNP15Z**		**EUCNP15Z**		**EUDOL15Z**	50
2000 mg/15 mL		**EUALN12M15**		**EECNP12M15**		**EUCNP12M15**		**EUDOL12M15**	20

Ion exchange and mixed mode Extraction Columns

Weight /Vol.	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Sorbent	P/N	Qty
50 mg/1 mL	Diethylamino	**EUDAX1L1**	Aminopropyl	**EUNAX1L1**	Quaternary	**EUQAX1L1**	Carboxylic	**EUCCX1L1**	100
100 mg/1 mL		**EUDAX111**		**EUNAX111**	Amine	**EUQAX111**	Acid	**EUCCX111**	100
200 mg/3 mL		**EUDAX123**		**EUNAX123**	with Chloride	**EUQAX123**		**EUCCX123**	50
500 mg/3 mL		**EUDAX153**		**EUNAX153**	Counter Ion	**EUQAX153**		**EUCCX153**	50
500 mg/6 mL		**EUDAX156**		**EUNAX156**		**EUQAX156**		**EUCCX156**	50
1000 mg/6 mL		**EUDAX1M6**		**EUNAX1M6**		**EUQAX1M6**		**EUCCX1M6**	30
100 mg/10 mL		**EUDAX11Z**		**EUNAX11Z**		**EUQAX11Z**		**EUCCX11Z**	50
200 mg/10 mL		**EUDAX12Z**		**EUNAX12Z**		**EUQAX12Z**		**EUCCX12Z**	50
500 mg/10 mL		**EUDAX15Z**		**EUNAX15Z**		**EUQAX15Z**		**EUCCX15Z**	50
2000 mg/15 mL		**EUDAX12M15**		**EUNAX12M15**		**EUQAX12M15**		**EUCCX12M15**	20
50 mg/1 mL	Benzene-	**EUBCX1L1**	Hydrophobic	**EUCCX2L1**	Hydrophobic	**EUBCX2L1**	Hydrophobic	**EUQAX2L1**	100
100 mg/1 mL	-sulfonic	**EUBCX111**	plus	**EUCCX211**	plus	**EUBCX211**	plus	**EUQAX211**	100
200 mg/3 mL	Acid	**EUBCX123**	Carboxylic	**EUCCX223**	Benzene-	**EUBCX223**	Quaternary	**EUQAX223**	50
500 mg/3 mL		**EUBCX153**	Acid	**EUCCX253**	-sulfonic	**EUBCX253**	Amine	**EUQAX253**	50
500 mg/6 mL		**EUBCX156**		**EUCCX256**	Acid	**EUBCX256**		**EUQAX256**	50
1000 mg/6 mL		**EUBCX1M6**		**EUCCX2M6**		**EUBCX2M6**		**EUQAX2M6**	30
100 mg/10 mL		**EUBCX11Z**		**EUCCX21Z**		**EUBCX21Z**		**EUQAX21Z**	50
200 mg/10 mL		**EUBCX12Z**		**EUCCX22Z**		**EUBCX22Z**		**EUQAX22Z**	50
500 mg/10 mL		**EUBCX15Z**		**EUCCX25Z**		**EUBCX25Z**		**EUQAX25Z**	50
2000 mg/15 mL		**EUBCX12M15**		**EUCCX22M15**		**EUBCX22M15**		**EUQAX22M15**	