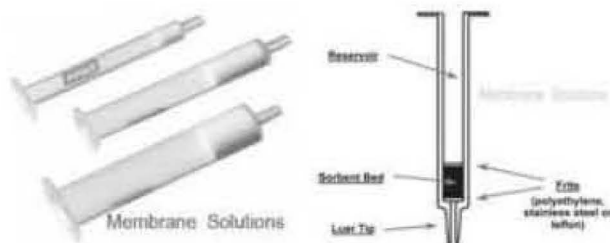


MS[®] Chrompure SPE Columns



Solid Phase Extraction

Solid-phase extraction (SPE) is a separation process by which compounds that are dissolved or suspended in a liquid mixture are separated from other compounds in the mixture according to their physical and chemical properties. Analytical laboratories use solid phase extraction to concentrate and purify samples for analysis. Solid phase extraction can be used to isolate analytes of interest from a wide variety of matrices, including urine, blood, water, beverages, soil, and animal tissue.

SPE's low solvent consumption, is convenient, safe and with high efficiency. The principle of "like dissolves like", SPE can be classified in four types: inverse SPE, normal phase SPE, ion exchange SPE, absorption SPE.



MS[®] Chrompure SPE Columns

MS offers Chrompure series to our customers, which have silica-based, organic copolymer or inorganic chemical based SPE columns. The filling material includes C18, NH₂, C8, Alumina, GCB, CN, Florisil, Si, SAX, SCX, PSA, PCX, PAX and so on. Column capacities consist of 1, 3, 6, and 10 ml sizes, etc. Our manufacturing process minimizes variability and improves recovery and cleanup procedures. Chrompure SPE product have the following several characteristics

SPE Main applications:

- Biological samples and natural compounds
- Pharmaceuticals and Drugs
- Pesticides and antibiotics in food and agricultural matrices
- Environmental Samples, organic compounds and pollutants.

Chrompure Feature

- Available in a range of packing media
- Chrompure quality sorbents for consistent results
- With various packing, ensure better selectivity



MS[®] Chrompure SPE Product

Silica-Based SPE

C18
C18-ne
C8
CN
PSA
NH₂
SAX
SCX
Silica

Polymer

PLS
PAX
PCX

Adsorptive material

Silica
Florisil
AL-A
AL-N
AL-B
GCB

Membrane Solutions LLC



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Silica Base

Chrompure C18-ne



Partical Size: 40-60 μm
Silica Base: irregular shaped
Pore Size: 52-68 \AA
Endcapped: no
Carbon(C%): 17%

- **Non-endcapped bonded phase** that enables the silica surface to be more active.
- Moderately nonpolar and polar secondary interactions.
- Enhanced the retention of polar and basic compounds than C18

Chrompure C18



Partical Size: 40-60 μm
Silica Base: irregular shaped
Pore Size: 52-68 \AA
Endcapped: no
Carbon(C%): 17%

Organic anlalytes extraction C18 has the broadest spectrum of retention among bonded silica sorbents, since it retains most organic analytes from aqueous matrices, when the compounds of interest vaty widely in structure.

Desalting When analyzing small to intermediate molecules, Chrompure C18 can be used for desalting aqueous matrices prior to ion exchange, as salts pass through the sorbent unretained.

Chrompure C8

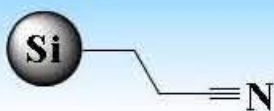


Partical Size: 40-60 μm
Silica Base: irregular shaped
Pore Size: 52-68 \AA
Endcapped: yes
Carbon(C%): 11%

Moderate Hydrophobicity: separating a wide range of compounds and replace C18 when too strongly retention on C18.

Simultaneous Extraction: fat- and water-solution vitamins from human serum and herbicides, fungicides, pesticides from waste

Chrompure CN



Partical Size: 40-60 μm
Silica Base: irregular shaped
Pore Size: 52-68 \AA
Endcapped: yes
Carbon(C%): 6.5%

- Both **normal** and **reversed-phase** chromatography
- Less polar compared to silica and less hydrophobic compared to C18 and C8.
- Usually used to extract acidic, neutral, and basic compounds from aqueous solutions.

Chrompure PSA



Partical Size: 40-60 μm
Silica Base: irregular shaped
Pore Size: 52-68 \AA
Endcapped: No
Carbon(C%): 7%
 pK_a : 10.1 and 10.9

- Similar selectivity to Chrompure NH_2 .
- Strong affinity and high capacity for removing fatty acids, organic acids, and some polar pigments and sugars when conducting multi-residue pesticide analysis in foods.
- Excellent sorbent for **chelation**.

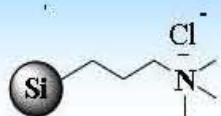
Chrompure NH_2



Partical Size: 40-60 μm
Silica Base: irregular shaped
Pore Size: 52-68 \AA
Endcapped: No
Carbon(C%): 3.5%
 pK_a : 9.8

- **Amino propyl phase**, both hydrogen bonding and anion exchange.
- Weaker anion exchanger retention of very strong anions such as sulfonic acids which may be retained irreversibly on SAX.
- Separate peptides, drugs and metabolites from physiological fluids, and extraction of mono- and polysaccharides, steroids, cholesterol and triglycerides.

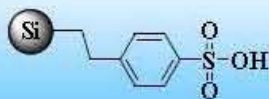
Chrompure SAX



Partical Size: 40-60 μ m
Silica Base: irregular shaped
Pore Size: 52-68 Å
Endcapped: no
Carbon(C%): 7.5%
pKa: completely dissociated

- **Strongest anion exchange sorbent** because of its quaternary amine functional group.
- Positive charged, better retention of **weaker anions** such as carboxylic acids that may not retain strongly enough on PSA or NH₂.
- Activate the ion exchanger by conditioning it with appropriate buffers.

Chrompure SCX



Partical Size: 40-60 μ m
Silica Base: irregular shaped
Pore Size: 52-68 Å
Endcapped: no
Carbon(C%): 10.9%
pKa<1.0

- **Strongest cation exchange sorbent** because of its benzenesulfonic acid functional group.
- Optimized for use in organic applications.
- **Nonpolar character** exhibited by benzene ring is useful to compounds with both cationic and nonpolar properties in aqueous solvent.

Inorganic Chemical Base

Chrompure Si



Partical Size: 40-60 μ m
Silica Base: irregular shaped
Pore Size: 52-68Å
Endcapped: no

- The most polar sorbent, one of the best sorbents available for selectively separating analytes of very similar structure.
- Extract various compounds from non-polar solvents using hydrogen bonding, accomplishing the elution successively with increasing the solvent polarity.
- Excellent capacity for removing target molecules from reaction by-products and excess reagents.

Chrompure Florisil



Average Partical Size: 150-200 μ m
Silica Base: irregular shaped

- Florisil is a magnesia silica gel, a polar sorbent capable to extract polar compounds from nonpolar matrix.
- Separate chlorinated pesticides, amines, herbicides, PCBs, ketones, organic acids and phenols

Chrompure Alumina-A



Acidic pH: ~4.5 (Brockman Act. I)
Average Partical Size: 125 μ m
Silica Base: irregular shaped

- Alumina-A enhances Lewis acid properties, which makes the sorbent more retentive towards electron-rich compounds.
- Alumina-A has a slightly cationic nature through pretreatment with acidic solutions.
- Suitable for retention neutral and anionic species

Chrompure Alumina-B



Basic pH: ~10.0
(Brockman Act. I)
Average Partical Size:
125µm
Silica Base: irregular shaped

- Exhibits Lewis base properties, more retentive towards electron-donors compounds.
- The surface has a slightly anionic nature through pretreatment with acidic solutions.
- Suitable for retention of neutral and cationic compounds.
- Strong hydrogen bonding is also effective for polar cations.

Chrompure Alumina-N



Neutral pH: ~7.5
(Brockman Act. I)
Average Partical Size:
125µm
Silica Base: irregular shaped

- Extremely polar sorbent, similar to silica.
- More stable under high pH conditions than unbonded silica.
- An electrically neutral surface retentive for electron-rich compounds like aromatic species and aliphatic amines, and compounds with electronegative group like oxygen, phosphorus and sulfur atoms.
- Extrat both nonpolar and polar compounds from aqueous and nonaqueous matrices respectively.

Chrompure Carbon

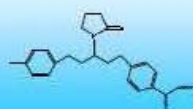


Sorbent : laminated structure
graphitized carbon
Average Partical Size:
120-400µm

- Higher and more stable recovery rates in extracting polar substance, like organochlorine, organophosphorus and nitrogen pesticides
- Excellent performance in organic extraction and purification
- Extremely rapid extract processing due to the few-porosity.

Organic Copolymer Base

Chrompure PLS



particle size: 80-100µm
pore size: 70-90 Å
area: 600-800m²

- Copolymer of polystyrene/ divinylbenzene, contained both hydrophilic and hydrophobic radicals
- Good retention on polar and non-polar molecule hydrophilelipophile balance.
- PLS has higher stability and wider pH range. Popular utilised in food

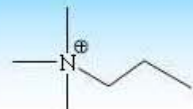
Chrompure PCX



particle size: 80-100µm
pore size: 70-90 Å
area: 600-800m²

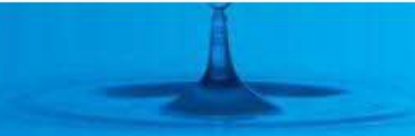
- Sulfonic acid group bonding polystyrene/divinylbenzene copolymer is mixed strong cation exchange sorbent. Both cation exchange and reverse phase retention mode, suitable for carboxylic acid compounds pKa between 2-8, mainly anionic compounds.

Chrompure PAX



particle size: 80-100µm
pore size: 70-90 Å
area: 600-800m²

- Quaternary ammonium group bonded copolymer is mixed anion exchange and reverse phase sorbent.
- Excellent extraction to purified acid, carboxy acid compounds, pKa between 2-8.



Ordering Information

Cat. No.	Description	Mass	Volume	Package (pcs/pk)
LBSC181001	C18	100mg	1mL	100
LBSC182003		200mg	3mL	50
LBSC185003		500mg	3mL	50
LBSC185006		500mg	6mL	30
LBSC1810006		1000mg	6mL	30
LBSC18N1001	C18-ne	100mg	1mL	100
LBSC18N2003		200mg	3mL	50
LBSC18N5003		500mg	3mL	50
LBSC18N5006		500mg	6mL	30
LBSC18N10006		1000mg	6mL	30
LBSC81001	C8	100mg	1mL	100
LBSC82003		200mg	3mL	50
LBSC85003		500mg	3mL	50
LBSC85006		500mg	6mL	30
LBSC810006		1000mg	6mL	30
LBSCN1001	CN	100mg	1mL	100
LBSCN5003		500mg	3mL	50
LBSCN10006		1000mg	6mL	30
LBSPSA1001	PSA	100mg	1mL	100
LBSPSA5003		500mg	3mL	50
LBSPSA5006		500mg	6mL	30
LBSPSA10006		1000mg	6mL	30
LBSNH21001	NH2	100mg	1mL	100
LBSNH22003		200mg	3mL	50
LBSNH25003		500mg	3mL	50
LBSNH25006		500mg	6mL	30
LBSNH210006		1000mg	6mL	30
LBSSAX1001	SAX	100mg	1mL	100
LBSSAX5003		500mg	3mL	50
LBSSAX5006		500mg	6mL	30
LBSSCX1001	SCX	100mg	1mL	100
LBSSCX5003		500mg	3mL	50
LBSSCX5006		500mg	6mL	30
LBSSI1001	Silica	100mg	1mL	100
LBSSI5003		500mg	3mL	50
LBSSI10006		1000mg	6mL	30



LBSFL1001	Florisil	100mg	1mL	100
LBSFL5003		500mg	3mL	50
LBSFL5006		500mg	6mL	30
LBSFL10006		1000mg	6mL	30
LBSALA1001	AL-A	100mg	1mL	100
LBSALA5003		500mg	3mL	50
LBSALA10006		1000mg	6mL	30
LBSALB1001	AL-B	100mg	1mL	100
LBSALB5003		500mg	3mL	50
LBSALB10006		1000mg	6mL	30
LBSALN1001	AL-N	100mg	1mL	100
LBSALN5003		500mg	3mL	50
LBSALN10006		1000mg	6mL	30
LBSGCB2503	GCB	250mg	3mL	50
LBSGCB5003		500mg	3mL	50
LBSGCB5006		500mg	6mL	30
LBSPLS0603	PLS	60mg	3mL	50
LBSPLS1506		150mg	6mL	30
LBSPLS2006		200mg	6mL	30
LBSPLS5006		500mg	6mL	30
LBSPLS5012		500mg	12mL	20
LBSPCX0603	PCX	60mg	3mL	50
LBSPCX1506		150mg	6mL	30
LBSPCX2006		200mg	6mL	30
LBSPCX5012		500mg	12mL	20
LBSPCX10020		1000mg	20mL	20
LBSPAX0603	PAX	60mg	3mL	50
LBSPAX1506		150mg	6mL	30
LBSPAX5012		500mg	12mL	20
LBSPAX10020		1000mg	20mL	20

Membrane Solutions LLC