

CLEAN-UP®

Solid Phase Extraction Columns

Hydrophobic Reverse Phase Columns



Hydrophobic Reverse Phases Offered:

- C18, Octadecyl
- C2, Ethyl
- Cn3, Propyl
- Cn4, n-Butyl
- Ci4, Isobutyl
- Ct4, Tertiary Butyl
- C5, Pentyl
- C6, Hexyl
- C7, Hexyl
- C8, Octyl
- C10, nDecyl
- C12, nDodecyl
- C20, Eicosyl
- Cyclohexyl
- Phenyl

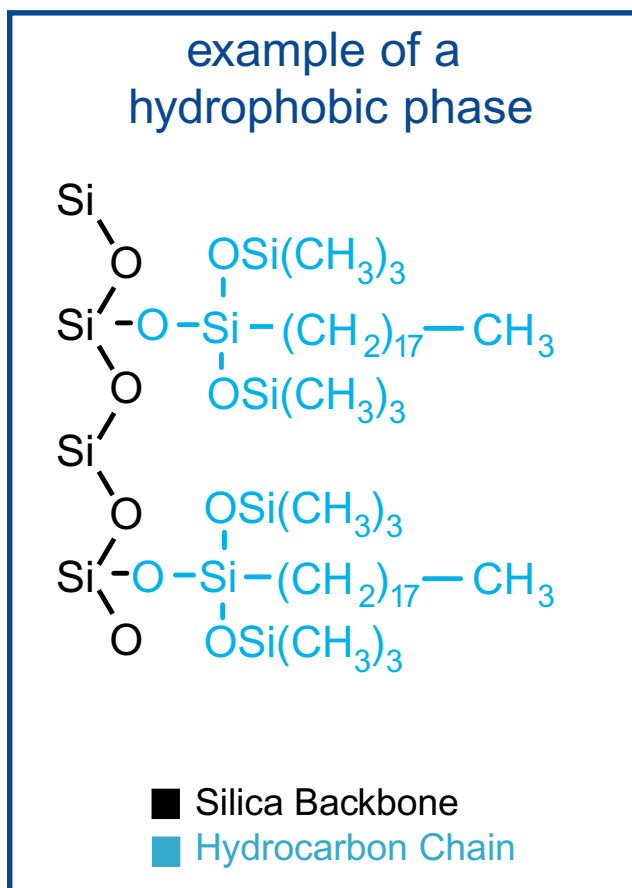
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Applications Manual

CLEAN-UP[®]

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 non-selective nature; C18 will extract a large number of compounds with differing chemical properties. To enhance 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.





Analytes*	Washes	Elutions
alkanes alkenes aromatics neutral compounds	aqueous, usually with some polar organic solvent	non-polar to polar organic

*typical compounds which can be extracted using hydrophobic columns

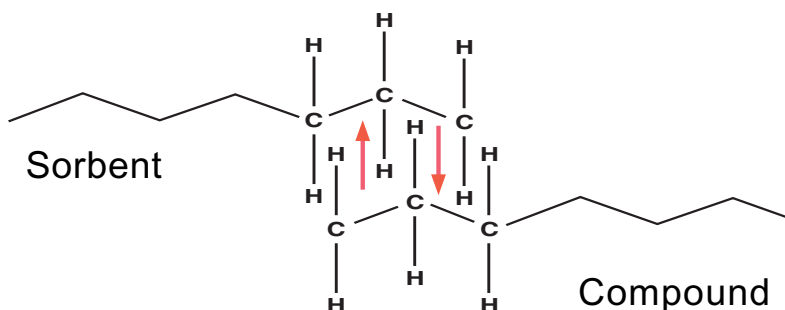
Mechanism of Hydrophobic Bonding

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.

Hydrophobic Sorbents & Structures

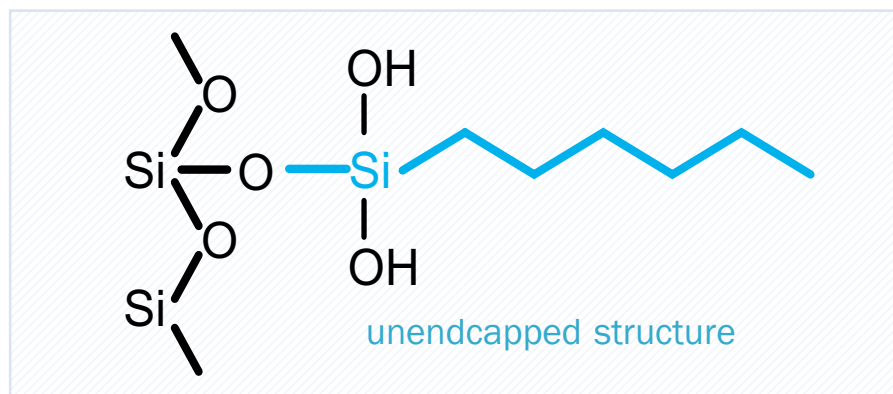
Sorbent	Structure
C2 ethyl	-SiCH ₂ CH ₃
C3 propyl	-Si-(CH ₂) ₂ CH ₃
C4 n-butyl	-Si-(CH ₂) ₃ CH ₃
Ci4 isobutyl	-Si-CH ₂ CH(CH ₃) ₂
Ct4 tertiary butyl	-Si-C(CH ₃) ₃
C5 pentyl	-Si-(CH ₂) ₄ CH ₃
C6 hexyl	-Si-(CH ₂) ₅ CH ₃
C7 heptyl	-Si-(CH ₂) ₆ CH ₃
C8 octyl	-Si-(CH ₂) ₇ CH ₃
C10 decyl	-Si-(CH ₂) ₉ CH ₃
C12 dodecyl	-Si-(CH ₂) ₁₁ CH ₃
C18 octadecyl	-Si-(CH ₂) ₁₇ CH ₃
C20 eicosyl	-Si-(CH ₂) ₁₉ CH ₃
C30 tricontyl	-Si-(CH ₂) ₂₉ CH ₃
Cyclohexyl	-Si- 
Phenyl	-Si- 

example of hydrophobic bonding

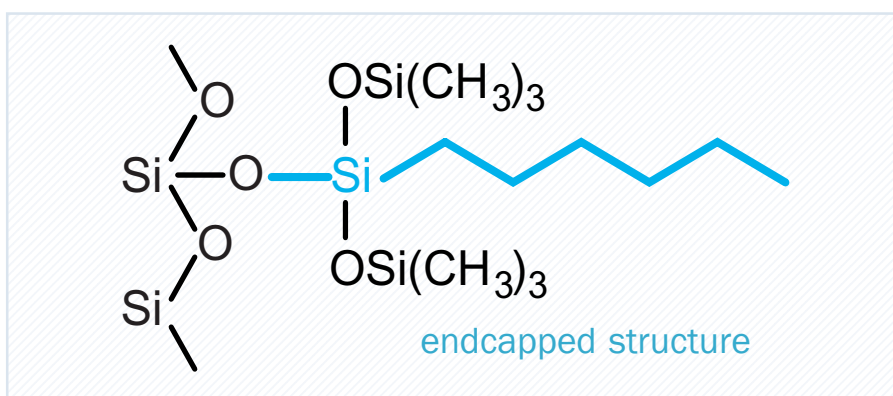


Unendcapped vs. Endcapped

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.

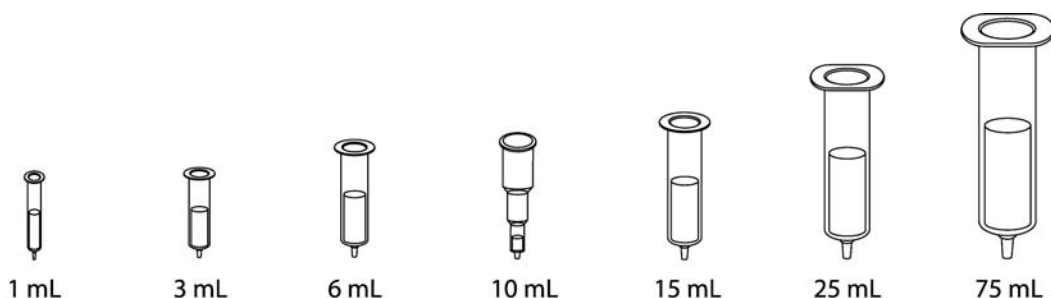


In order to decrease this slight polarity, these hydroxyl sites are deactivated. Proprietary bonding techniques ensure that these sites are 100% reacted, leading to a complete endcapping. Because there are no hydroxyl sites left, our endcapped columns are more hydrophobic than our unendcapped columns.



CLEAN-UP[®] Solid Phase Extraction Columns

Hydrophobic Product Guide



Chemistries are offered on these particle sizes.

Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

C18, Octadecyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC181L1	CUC181L1	50mg / 1mL	100
CEC18111	CUC18111	100mg / 1mL	100
CEC18113	CUC18113	100mg / 3mL	50
CEC18123	CUC18123	200mg / 3mL	50
CEC18153	CUC18153	500mg / 3mL	50
CEC18156	CUC18156	500mg / 6mL	50
CEC1811Z	CUC1811Z	100mg / 10mL	50
CEC1812Z	CUC1812Z	200mg / 10mL	50
CEC1815Z	CUC1815Z	500mg / 10mL	50
CEC181M6	CUC181M6	1g / 6mL	30
CEC1812M15	CUC1812M15	2g / 15mL	20
CEC1815M25	CUC1815M25	5g / 25mL	20
CEC18110M75	CUC18110M75	10g / 75mL	10

% Organic Loading: 21.70

Application:

Removes hydrophobic impurities, de-salting and purification of hydrophobic compounds.

C2, Ethyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC021L1	CUC021L1	50mg / 1mL	100
CEC02111	CUC02111	100mg / 1mL	100
CEC02113	CUC02113	100mg / 3mL	50
CEC02123	CUC02123	200mg / 3mL	50
CEC02153	CUC02153	500mg / 3mL	50
CEC02156	CUC02156	500mg / 6mL	50
CEC0211Z	CUC0211Z	100mg / 10mL	50
CEC0212Z	CUC0212Z	200mg / 10mL	50
CEC0215Z	CUC0215Z	500mg / 10mL	50
CEC021M6	CUC021M6	1g / 6mL	30
CEC0212M15	CUC0212M15	2g / 15mL	20
CEC0215M25	CUC0215M25	5g / 25mL	20
CEC02110M75	CUC02110M75	10g / 75mL	10

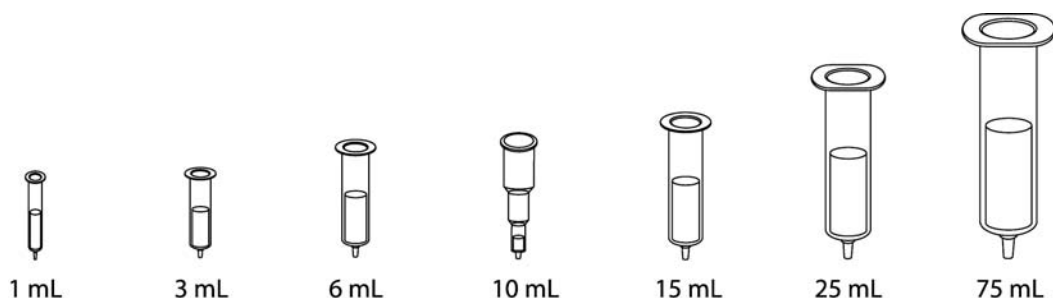
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Application:

Removes large or more hydrophobic compounds.

CLEAN-UP[®] Solid Phase Extraction Columns

Hydrophobic Product Guide



Chemistries are offered on these particle sizes.

Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

Cn3, Propyl			
Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CECn31L1	CUCn31L1	50mg / 1mL	100
CECn3111	CUCn3111	100mg / 1mL	100
CECn3113	CUCn3113	100mg / 3mL	50
CECn3123	CUCn3123	200mg / 3mL	50
CECn3153	CUCn3153	500mg / 3mL	50
CECn3156	CUCn3156	500mg / 6mL	50
CECn311Z	CUCn311Z	100mg / 10mL	50
CECn312Z	CUCn312Z	200mg / 10mL	50
CECn315Z	CUCn315Z	500mg / 10mL	50
CECn31M6	CUCn31M6	1g / 6mL	30
CECn312M15	CUCn312M15	2g / 15mL	20
CECn315M25	CUCn315M25	5g / 25mL	20
CECn3110M75	CUCn3110M75	10g / 75mL	10

% Organic Loading: 7.60

Application:

Removes large or more hydrophobic compounds.

Cn4, n-Butyl			
Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CECn41L1	CUCn41L1	50mg / 1mL	100
CECn4111	CUCn4111	100mg / 1mL	100
CECn4113	CUCn4113	100mg / 3mL	50
CECn4123	CUCn4123	200mg / 3mL	50
CECn4153	CUCn4153	500mg / 3mL	50
CECn4156	CUCn4156	500mg / 6mL	50
CECn411Z	CUCn411Z	100mg / 10mL	50
CECn412Z	CUCn412Z	200mg / 10mL	50
CECn415Z	CUCn415Z	500mg / 10mL	50
CECn41M6	CUCn41M6	1g / 6mL	30
CECn412M15	CUCn412M15	2g / 15mL	20
CECn415M25	CUCn415M25	5g / 25mL	20
CECn4110M75	CUCn4110M75	10g / 75mL	10

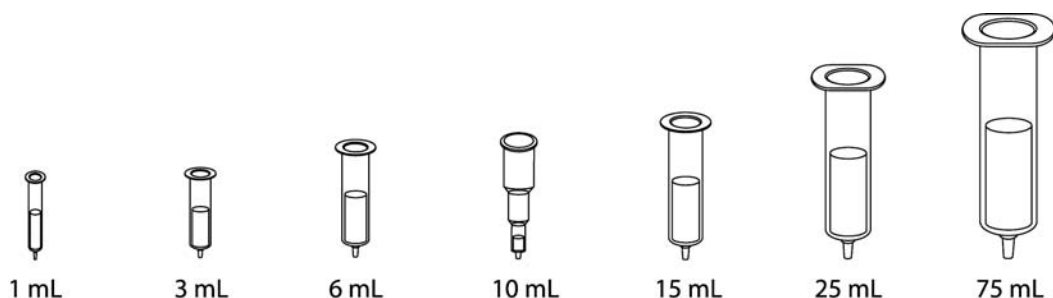
% Organic Loading: 8.50

Application:

Removes large or more hydrophobic compounds.

CLEAN-UP[®] Solid Phase Extraction Columns

Hydrophobic Product Guide



Chemistries are offered on these particle sizes.

Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

Ci4, Isobutyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CECi41L1	CUCi41L1	50mg / 1mL	100
CECi4111	CUCi4111	100mg / 1mL	100
CECi4113	CUCi4113	100mg / 3mL	50
CECi4123	CUCi4123	200mg / 3mL	50
CECi4153	CUCi4153	500mg / 3mL	50
CECi4156	CUCi4156	500mg / 6mL	50
CECi411Z	CUCi411Z	100mg / 10mL	50
CECi412Z	CUCi412Z	200mg / 10mL	50
CECi415Z	CUCi415Z	500mg / 10mL	50
CECi41M6	CUCi41M6	1g / 6mL	30
CECi412M15	CUCi412M15	2g / 15mL	20
CECi415M25	CUCi415M25	5g / 25mL	20
CECi4110M75	CUCi4110M75	10g / 75mL	10

% Organic Loading: 8.80

Application:

Removes large or more hydrophobic compounds.

Ct4, Tertiary Butyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CECt41L1	CUCt41L1	50mg / 1mL	100
CECt4111	CUCt4111	100mg / 1mL	100
CECt4113	CUCt4113	100mg / 3mL	50
CECt4123	CUCt4123	200mg / 3mL	50
CECt4153	CUCt4153	500mg / 3mL	50
CECt4156	CUCt4156	500mg / 6mL	50
CECt411Z	CUCt411Z	100mg / 10mL	50
CECt412Z	CUCt412Z	200mg / 10mL	50
CECt415Z	CUCt415Z	500mg / 10mL	50
CECt41M6	CUCt41M6	1g / 6mL	30
CECt412M15	CUCt412M15	2g / 15mL	20
CECt415M25	CUCt415M25	5g / 25mL	20
CECt4110M75	CUCt4110M75	10g / 75mL	10

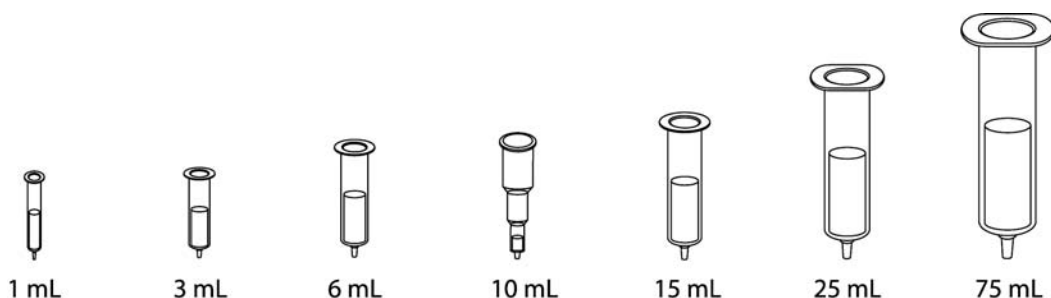
% Organic Loading: 8.50

Application:

Removes large or more hydrophobic compounds.

CLEAN-UP[®] Solid Phase Extraction Columns

Hydrophobic Product Guide



Chemistries are offered on these particle sizes.

Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

C5, Pentyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC051L1	CUC051L1	50mg / 1mL	100
CEC05111	CUC05111	100mg / 1mL	100
CEC05113	CUC05113	100mg / 3mL	50
CEC05123	CUC05123	200mg / 3mL	50
CEC05153	CUC05153	500mg / 3mL	50
CEC05156	CUC05156	500mg / 6mL	50
CEC0511Z	CUC0511Z	100mg / 10mL	50
CEC0512Z	CUC0512Z	200mg / 10mL	50
CEC0515Z	CUC0515Z	500mg / 10mL	50
CEC051M6	CUC051M6	1g / 6mL	30
CEC0512M15	CUC0512M15	2g / 15mL	20
CEC0515M25	CUC0515M25	5g / 25mL	20
CEC05110M75	CUC05110M75	10g / 75mL	10

% Organic Loading: 9.50

Application:

Removes large or more hydrophobic compounds.

C6, Hexyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC061L1	CUC061L1	50mg / 1mL	100
CEC06111	CUC06111	100mg / 1mL	100
CEC06113	CUC06113	100mg / 3mL	50
CEC06123	CUC06123	200mg / 3mL	50
CEC06153	CUC06153	500mg / 3mL	50
CEC06156	CUC06156	500mg / 6mL	50
CEC0611Z	CUC0611Z	100mg / 10mL	50
CEC0612Z	CUC0612Z	200mg / 10mL	50
CEC0615Z	CUC0615Z	500mg / 10mL	50
CEC061M6	CUC061M6	1g / 6mL	30
CEC0612M15	CUC0612M15	2g / 15mL	20
CEC0615M25	CUC0615M25	5g / 25mL	20
CEC06110M75	CUC06110M75	10g / 75mL	10

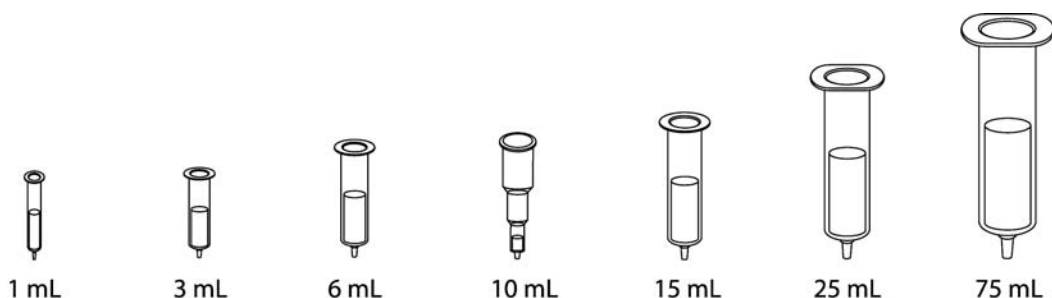
% Organic Loading: 9.50

Application:

Removes large or more hydrophobic compounds.

CLEAN-UP[®] Solid Phase Extraction Columns

Hydrophobic Product Guide



Chemistries are offered on these particle sizes.

Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

C7, Hexyl			
Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC071L1	CUC071L1	50mg / 1mL	100
CEC07111	CUC07111	100mg / 1mL	100
CEC07113	CUC07113	100mg / 3mL	50
CEC07123	CUC07123	200mg / 3mL	50
CEC07153	CUC07153	500mg / 3mL	50
CEC07156	CUC07156	500mg / 6mL	50
CEC0711Z	CUC0711Z	100mg / 10mL	50
CEC0712Z	CUC0712Z	200mg / 10mL	50
CEC0715Z	CUC0715Z	500mg / 10mL	50
CEC071M6	CUC071M6	1g / 6mL	30
CEC0712M15	CUC0712M15	2g / 15mL	20
CEC0715M25	CUC0715M25	5g / 25mL	20
CEC07110M75	CUC07110M75	10g / 75mL	10

% Organic Loading: 15.70

Application:

Removes large or more hydrophobic compounds.

C8, Octyl			
Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC081L1	CUC081L1	50mg / 1mL	100
CEC08111	CUC08111	100mg / 1mL	100
CEC08113	CUC08113	100mg / 3mL	50
CEC08123	CUC08123	200mg / 3mL	50
CEC08153	CUC08153	500mg / 3mL	50
CEC08156	CUC08156	500mg / 6mL	50
CEC0811Z	CUC0811Z	100mg / 10mL	50
CEC0812Z	CUC0812Z	200mg / 10mL	50
CEC0815Z	CUC0815Z	500mg / 10mL	50
CEC081M6	CUC081M6	1g / 6mL	30
CEC0812M15	CUC0812M15	2g / 15mL	20
CEC0815M25	CUC0815M25	5g / 25mL	20
CEC08110M75	CUC08110M75	10g / 75mL	10

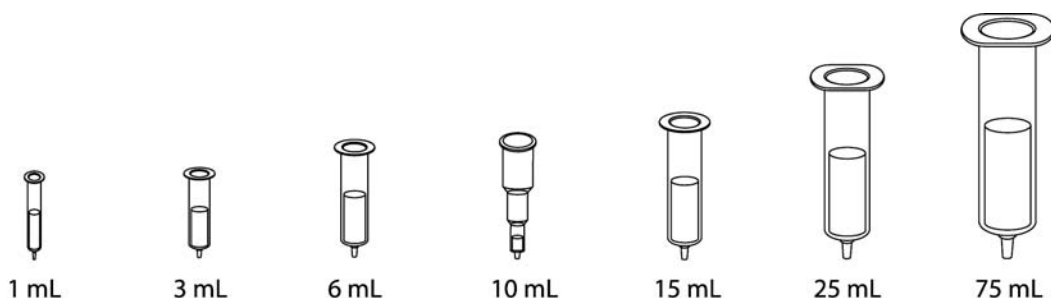
% Organic Loading: 15.70

Application:

Removes large or more hydrophobic compounds.

CLEAN-UP[®] Solid Phase Extraction Columns

Hydrophobic Product Guide



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Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

C10, nDecyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC101L1	CUC101L1	50mg / 1mL	100
CEC10111	CUC10111	100mg / 1mL	100
CEC10113	CUC10113	100mg / 3mL	50
CEC10123	CUC10123	200mg / 3mL	50
CEC10153	CUC10153	500mg / 3mL	50
CEC10156	CUC10156	500mg / 6mL	50
CEC1011Z	CUC1011Z	100mg / 10mL	50
CEC1012Z	CUC1012Z	200mg / 10mL	50
CEC1015Z	CUC1015Z	500mg / 10mL	50
CEC101M6	CUC101M6	1g / 6mL	30
CEC1012M15	CUC1012M15	2g / 15mL	20
CEC1015M25	CUC1015M25	5g / 25mL	20
CEC10110M75	CUC10110M75	10g / 75mL	10

% Organic Loading: 15.70

Application:

Removes large or more hydrophobic compounds.

C12, nDodecyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC121L1	CUC121L1	50mg / 1mL	100
CEC12111	CUC12111	100mg / 1mL	100
CEC12113	CUC12113	100mg / 3mL	50
CEC12123	CUC12123	200mg / 3mL	50
CEC12153	CUC12153	500mg / 3mL	50
CEC12156	CUC12156	500mg / 6mL	50
CEC1211Z	CUC1211Z	100mg / 10mL	50
CEC1212Z	CUC1212Z	200mg / 10mL	50
CEC1215Z	CUC1215Z	500mg / 10mL	50
CEC121M6	CUC121M6	1g / 6mL	30
CEC1212M15	CUC1212M15	2g / 15mL	20
CEC1215M25	CUC1215M25	5g / 25mL	20
CEC12110M75	CUC12110M75	10g / 75mL	10

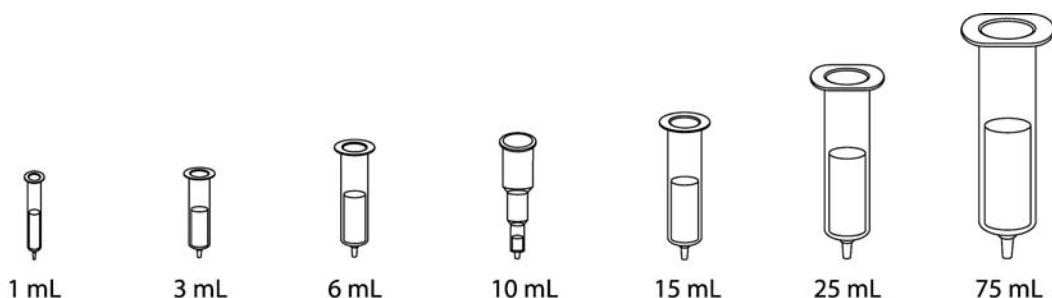
% Organic Loading: 15.70

Application:

Removes large or more hydrophobic compounds.

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Hydrophobic Product Guide



Chemistries are offered on these particle sizes.

Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

C20, Eicosyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC201L1	CUC201L1	50mg / 1mL	100
CEC20111	CUC20111	100mg / 1mL	100
CEC20113	CUC20113	100mg / 3mL	50
CEC20123	CUC20123	200mg / 3mL	50
CEC20153	CUC20153	500mg / 3mL	50
CEC20156	CUC20156	500mg / 6mL	50
CEC2011Z	CUC2011Z	100mg / 10mL	50
CEC2012Z	CUC2012Z	200mg / 10mL	50
CEC2015Z	CUC2015Z	500mg / 10mL	50
CEC201M6	CUC201M6	1g / 6mL	30
CEC2012M15	CUC2012M15	2g / 15mL	20
CEC2015M25	CUC2015M25	5g / 25mL	20
CEC20110M75	CUC20110M75	10g / 75mL	10

% Organic Loading: 24.30

Application:

Removes smallest or least hydrophobic compounds.

C30, Tricontyl

Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEC301L1	CUC301L1	50mg / 1mL	100
CEC30111	CUC30111	100mg / 1mL	100
CEC30113	CUC30113	100mg / 3mL	50
CEC30123	CUC30123	200mg / 3mL	50
CEC30153	CUC30153	500mg / 3mL	50
CEC30156	CUC30156	500mg / 6mL	50
CEC3011Z	CUC3011Z	100mg / 10mL	50
CEC3012Z	CUC3012Z	200mg / 10mL	50
CEC3015Z	CUC3015Z	500mg / 10mL	50
CEC301M6	CUC301M6	1g / 6mL	30
CEC3012M15	CUC3012M15	2g / 15mL	20
CEC3015M25	CUC3015M25	5g / 25mL	20
CEC30110M75	CUC30110M75	10g / 75mL	10

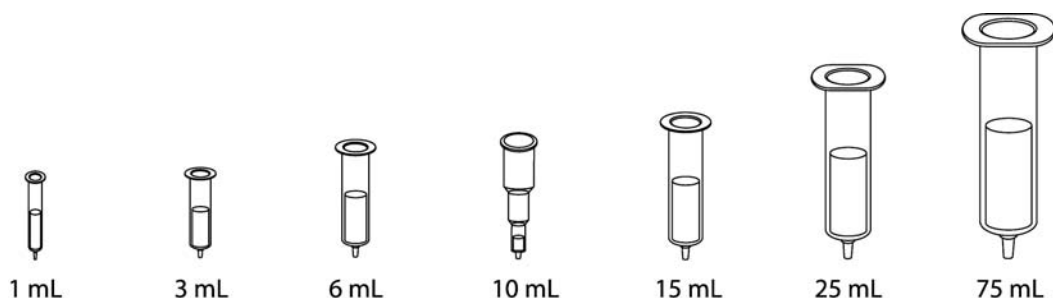
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Application:

Removes smallest or least hydrophobic compounds.

CLEAN-UP[®] Solid Phase Extraction Columns

Hydrophobic Product Guide



Chemistries are offered on these particle sizes.

Small Particle (5-20 μm)

Intermediate Particle (25-40 μm)

Standard Particle (40-60 μm)

Large Particle (125-210 μm)

Cyclohexyl			
Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CECYH1L1	CUCYH1L1	50mg / 1mL	100
CECYH111	CUCYH111	100mg / 1mL	100
CECYH113	CUCYH113	100mg / 3mL	50
CECYH123	CUCYH123	200mg / 3mL	50
CECYH153	CUCYH153	500mg / 3mL	50
CECYH156	CUCYH156	500mg / 6mL	50
CECYH11Z	CUCYH11Z	100mg / 10mL	50
CECYH12Z	CUCYH12Z	200mg / 10mL	50
CECYH15Z	CUCYH15Z	500mg / 10mL	50
CECYH1M6	CUCYH1M6	1g / 6mL	30
CECYH12M15	CUCYH12M15	2g / 15mL	20
CECYH15M25	CUCYH15M25	5g / 25mL	20
CECYH110M75	CUCYH110M75	10g / 75mL	10

% Organic Loading: 11.60

Application:

Scavenger for phenolic compounds.

Phenyl			
Part Number Endcapped	Part Number Unendcapped	Amount sorbent / Tube volume	Units per bag
CEPHY1L1	CUPHY1L1	50mg / 1mL	100
CEPHY111	CUPHY111	100mg / 1mL	100
CEPHY113	CUPHY113	100mg / 3mL	50
CEPHY123	CUPHY123	200mg / 3mL	50
CEPHY153	CUPHY153	500mg / 3mL	50
CEPHY156	CUPHY156	500mg / 6mL	50
CEPHY11Z	CUPHY11Z	100mg / 10mL	50
CEPHY12Z	CUPHY12Z	200mg / 10mL	50
CEPHY15Z	CUPHY15Z	500mg / 10mL	50
CEPHY1M6	CUPHY1M6	1g / 6mL	30
CEPHY12M15	CUPHY12M15	2g / 15mL	20
CEPHY15M25	CUPHY15M25	5g / 25mL	20
CEPHY110M75	CUPHY110M75	10g / 75mL	10

% Organic Loading: 11.00

Application:

Scavenger for polar compounds.