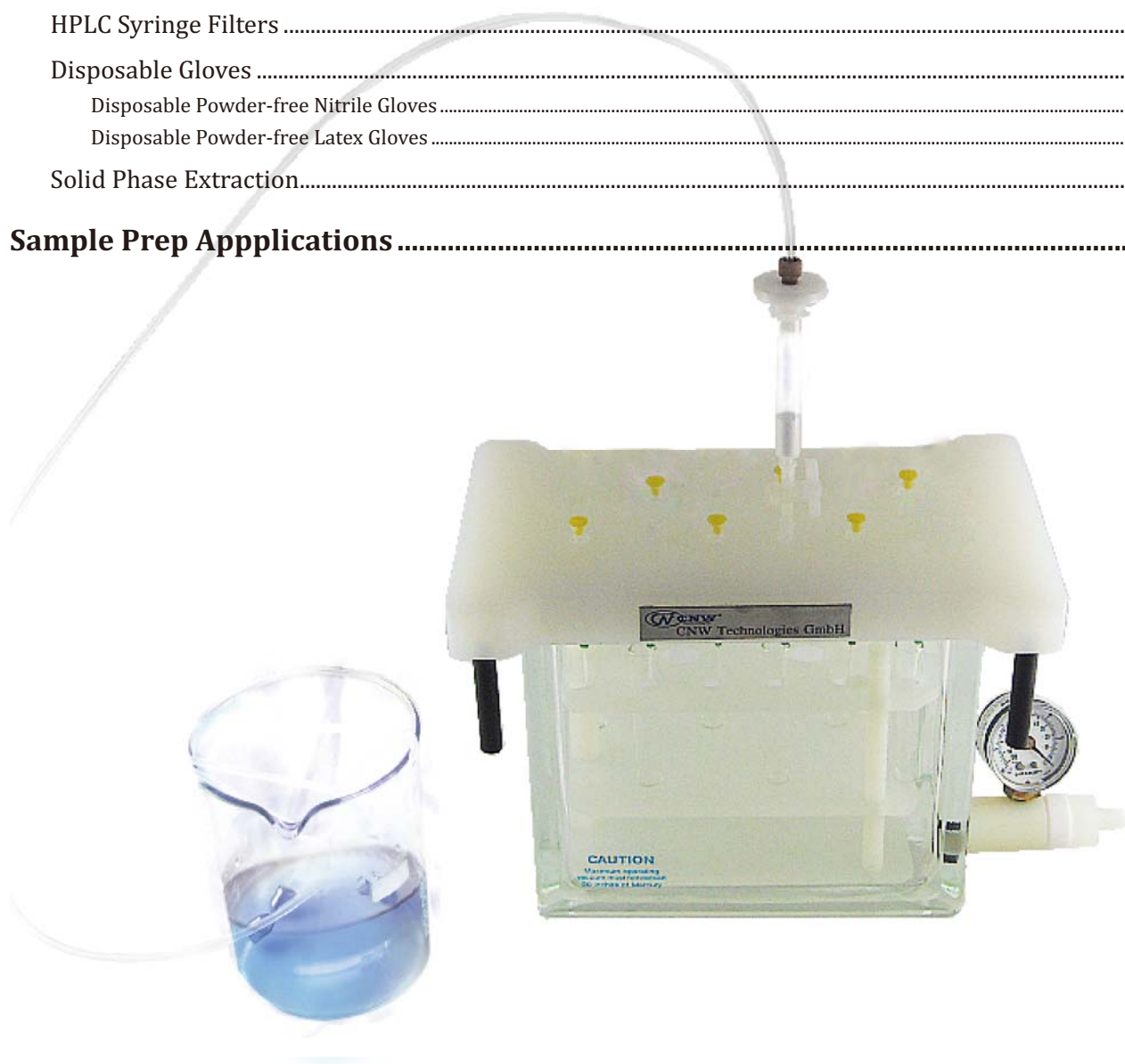
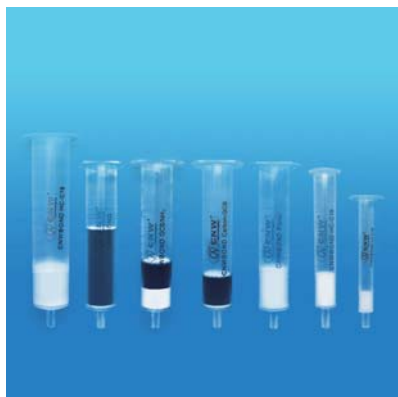


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SPE Columns



## Solid Phase Extraction

### Introduction

Solid Phase Extraction (SPE) is a technique widely used for sample preparation and purification or isolation. Over the last twenty years, the popularity of this technique has increased dramatically. SPE extends the lifetime of chromatographic systems and improves qualitative analysis. SPE is mainly used to extract an analyte (compound of interest) from impurities in a wide variety of matrices like biological fluids (plasma, blood and urine), water, soil, etc., to concentrate analyte of interest, or purify samples prior to the analysis.

Common SPE applications:

- Pesticides and antibiotics in food and agricultural matrices
- Pharmaceuticals and metabolites in biological fluids
- Drugs of abuse in biological fluids
- Vitamins and proteins or peptide
- Organic compounds in water and environment

### SPE Columns

CNW offers two series of SPE columns to our customers.

**CNWBOND** series mainly includes the silica-bond and adsorption SPE cartridges. These products are used most widely in SPE processing. CNWBOND uses very pure and reproducible bulks to make your samples to be very clean and ready to be analyzed in the next step.

**Poly-Sery** series is the polymer-based SPE cartridge, which includes different modified copolymer types. These products are becoming more and more popular used in modern SPE processing, because these sorbents have special properties of faster throughput, higher reproducibility, stronger retention and selectivity, more stable pH durability etc., which make your method to be easy and faster with satisfied result.

To request a price quote or inquire on the feasibility of CNW manufacturing a custom SPE product, please contact us directly or local representatives.

### CNWBOND C1

CNWBOND C1 has the lowest hydrophobicity of all alkyl group bonded phases. Due to the single carbon functional group, the sorbent is useful in the separation of large biomolecules that have extensive hydrophobic regions, and polar compounds that are easier to be retained and eluted.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 5% carbon loading and endcapped.

#### CNWBOND C1 SPE Cartridge

Art.	Description	Package
2.CA0150.0001	50mg, 1mL	100 pcs
2.CA0151.0001	100mg, 1mL	100 pcs
2.CA0152.0001	200mg, 3mL	50 pcs
2.CA0153.0001	500mg, 3mL	50 pcs
2.CA0154.0001	500mg, 6mL	30 pcs
2.CA0155.0001	1g, 6mL	30 pcs
2.CA0156.0001	2g, 6mL	30 pcs
2.CA0157.0001	1g, 10mL	20 pcs
2.CA0158.0001	2g, 10mL	20 pcs
2.CA0159.0001	5g, 35mL	20 pcs



SPE Manifold

For more information about this product, please refer to page 30.

Art.	Description	Package
2.CA0160.0001	10g, 35mL	20 pcs
2.CA0161.0001	10g, 60mL	16 pcs
2.CA0162.0001	20g, 60mL	16 pcs

**CNWBOND C1 SPE Bulk Packing**

Art.	Description	Package
2.CA0101.0001	-	100 g

**CNWBOND C2-ne**

CNWBOND C2-ne is a non-polar sorbent with low hydrophobicity which can be used to replace C18 and C8 when compounds are retained too strongly on the C18 and C8. It is popular for the extraction of drugs from plasma and serum.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 6% carbon loading and non-encapped.

**CNWBOND C2-ne SPE Cartridge**

Art.	Description	Package
2.CA0250.0001	50mg, 1mL	100 pcs
2.CA0251.0001	100mg, 1mL	100 pcs
2.CA0252.0001	200mg, 3mL	50 pcs
2.CA0253.0001	500mg, 3mL	50 pcs
2.CA0254.0001	500mg, 6mL	30 pcs
2.CA0255.0001	1g, 6mL	30 pcs
2.CA0256.0001	2g, 6mL	30 pcs
2.CA0257.0001	1g, 10mL	20 pcs
2.CA0258.0001	2g, 10mL	20 pcs
2.CA0259.0001	5g, 35mL	20 pcs
2.CA0260.0001	10g, 35mL	20 pcs
2.CA0261.0001	10g, 60mL	16 pcs
2.CA0262.0001	20g, 60mL	16 pcs

**CNWBOND C2-ne SPE Bulk Packing**

Art.	Description	Package
2.CA0201.0001	-	100 g

**CNWBOND C4**

CNWBOND C4 has moderate hydrophobicity which is used to extract large biomolecules like proteins/peptides in aqueous samples. It works best for molecules with a large hydrophilic region or in case where the hydrophobic region is buried with the 3D structure.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 8% carbon loading and endcapped.

**CNWBOND C4 SPE Cartridge**

Art.	Description	Package
2.CA0350.0001	50mg, 1mL	100 pcs
2.CA0351.0001	100mg, 1mL	100 pcs
2.CA0352.0001	200mg, 3mL	50 pcs
2.CA0353.0001	500mg, 3mL	50 pcs
2.CA0354.0001	500mg, 6mL	30 pcs



Art.	Description	Package
2.CA0355.0001	1g, 6mL	30 pcs
2.CA0356.0001	2g, 6mL	30 pcs
2.CA0357.0001	1g, 10mL	20 pcs
2.CA0358.0001	2g, 10mL	20 pcs
2.CA0359.0001	5g, 35mL	20 pcs
2.CA0360.0001	10g, 35mL	20 pcs
2.CA0361.0001	10g, 60mL	16 pcs
2.CA0362.0001	20g, 60mL	16 pcs

#### CNWBOND C4 SPE Bulk Packing

Art.	Description	Package
2.CA0301.0001	-	100 g

### CNWBOND C4-ne

Due to shorter alkyl chains and non-encapped the silica surface is not completely shielded, CNWBOND C4-ne is similar to C4 but more polar so as to enhance retention of basic and polar compounds

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 8% carbon loading and non-encapped.

#### CNWBOND C4-ne SPE Cartridge

Art.	Description	Package
2.CA0450.0001	50mg, 1mL	100 pcs
2.CA0451.0001	100mg, 1mL	100 pcs
2.CA0452.0001	200mg, 3mL	50 pcs
2.CA0453.0001	500mg, 3mL	50 pcs
2.CA0454.0001	500mg, 6mL	30 pcs
2.CA0455.0001	1g, 6mL	30 pcs
2.CA0456.0001	2g, 6mL	30 pcs
2.CA0457.0001	1g, 10mL	20 pcs
2.CA0458.0001	2g, 10mL	20 pcs
2.CA0459.0001	5g, 35mL	20 pcs
2.CA0460.0001	10g, 35mL	20 pcs
2.CA0461.0001	10g, 60mL	16 pcs
2.CA0462.0001	20g, 60mL	16 pcs

#### CNWBOND C4-ne SPE Bulk Packing

Art.	Description	Package
2.CA0401.0001	-	100 g

### CNWBOND C8



CNWBOND C8 has moderate hydrophobicity that works well for separating a wide range of compounds and to be used instead of C18 when too strongly retention on C18. The C8 is widely utilized in the simultaneous extraction of fat- and water-soluble vitamins from human serum and herbicides, fungicides, pesticides from waste material.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 12% carbon loading and encapped.

#### CNWBOND C8 SPE Cartridge

Art.	Description	Package
2.CA0550.0001	50mg, 1mL	100 pcs

Art.	Description	Package
2.CA0551.0001	100mg, 1mL	100 pcs
2.CA0552.0001	200mg, 3mL	50 pcs
2.CA0553.0001	500mg, 3mL	50 pcs
2.CA0554.0001	500mg, 6mL	30 pcs
2.CA0555.0001	1g, 6mL	30 pcs
2.CA0556.0001	2g, 6mL	30 pcs
2.CA0557.0001	1g, 10mL	20 pcs
2.CA0558.0001	2g, 10mL	20 pcs
2.CA0559.0001	5g, 35mL	20 pcs
2.CA0560.0001	10g, 35mL	20 pcs
2.CA0561.0001	10g, 60mL	16 pcs
2.CA0562.0001	20g, 60mL	16 pcs

**CNWBOND C8 SPE Bulk Packing**

Art.	Description	Package
2.CA0501.0001	-	100 g

**CNWBOND C8-ne**

CNWBOND C8-ne is similar to C8 but is non-encapped, which has enhanced retention of more polar and basic compounds at the same time.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 12% carbon loading and non-encapped.

**CNWBOND C8-ne SPE Cartridge**

Art.	Description	Package
2.CA0650.0001	50mg, 1mL	100 pcs
2.CA0651.0001	100mg, 1mL	100 pcs
2.CA0652.0001	200mg, 3mL	50 pcs
2.CA0653.0001	500mg, 3mL	50 pcs
2.CA0654.0001	500mg, 6mL	30 pcs
2.CA0655.0001	1g, 6mL	30 pcs
2.CA0656.0001	2g, 6mL	30 pcs
2.CA0657.0001	1g, 10mL	20 pcs
2.CA0658.0001	2g, 10mL	20 pcs
2.CA0659.0001	5g, 35mL	20 pcs
2.CA0660.0001	10g, 35mL	20 pcs
2.CA0661.0001	10g, 60mL	16 pcs
2.CA0662.0001	20g, 60mL	16 pcs

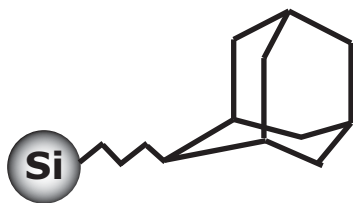
**CNWBOND C8-ne SPE Bulk Packing**

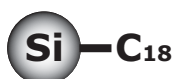
Art.	Description	Package
2.CA0601.0001	-	100 g

**CNWBOND C12**

CNWBOND C12 has a polarity similar to C18 with additional steric bulk to provide additional separation characteristics.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 16% carbon loading and encapped.





### CNWBOND C12 SPE Cartridge

Art.	Description	Package
2.CA0750.0001	50mg, 1mL	100 pcs
2.CA0751.0001	100mg, 1mL	100 pcs
2.CA0752.0001	200mg, 3mL	50 pcs
2.CA0753.0001	500mg, 3mL	50 pcs
2.CA0754.0001	500mg, 6mL	30 pcs
2.CA0755.0001	1g, 6mL	30 pcs
2.CA0756.0001	2g, 6mL	30 pcs
2.CA0757.0001	1g, 10mL	20 pcs
2.CA0758.0001	2g, 10mL	20 pcs
2.CA0759.0001	5g, 35mL	20 pcs
2.CA0760.0001	10g, 35mL	20 pcs
2.CA0761.0001	10g, 60mL	16 pcs
2.CA0762.0001	20g, 60mL	16 pcs

### CNWBOND C12 SPE Bulk Packing

Art.	Description	Package
2.CA0701.0001	-	100 g

## CNWBOND HC-C18

CNWBOND HC-C18 is the traditional matrix for reversed-phase chromatography. It is widely used as the most hydrophobic silica-based sorbent for nonpolar compounds. Considered as the least selective phase since it retains most organic analytes from aqueous matrices, offer a benefit when the compounds of interest vary widely in structure. C18 can also be utilized for desalting aqueous matrices prior to ion exchange because salts pass through it without retained. The high loading of HC-C18 provides the highest degree of hydrophobicity which increases binding capacities and higher recoveries, higher carbon loading also offer greater resistance to extreme pH conditions. C18 is utilized for cleaning, extracting and concentrating pollutants from aqueous environmental samples, herbicides, fungicides and pesticides from waste material, foods and beverages, typically drugs and metabolites from physiological fluids.

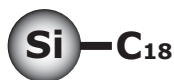
40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 17% carbon loading and endcapped.

### CNWBOND HC-C18 SPE Cartridge

Art.	Description	Package
2.CA0850.0001	50mg, 1mL	100 pcs
2.CA0851.0001	100mg, 1mL	100 pcs
2.CA0852.0001	200mg, 3mL	50 pcs
2.CA0853.0001	500mg, 3mL	50 pcs
2.CA0854.0001	500mg, 6mL	30 pcs
2.CA0855.0001	1g, 6mL	30 pcs
2.CA0856.0001	2g, 6mL	30 pcs
2.CA0857.0001	1g, 10mL	20 pcs
2.CA0858.0001	2g, 10mL	20 pcs
2.CA0859.0001	5g, 35mL	20 pcs
2.CA0860.0001	10g, 35mL	20 pcs
2.CA0861.0001	10g, 60mL	16 pcs
2.CA0862.0001	20g, 60mL	16 pcs

### CNWBOND HC-C18 SPE Bulk Packing

Art.	Description	Package
2.CA0801.0001	-	100 g



## CNWBOND LC-C18

CNWBOND LC-C18 has lower carbon loading than HC-C18, which gives unique selectivities. It is also a highly retentive nonpolar silica-based sorbent due to the long hydrocarbon chain, the lower percent carbon loading has been optimized for polar analytes and very strong nonpolar compounds which is too strongly retained on high carbon loading C18. Its typical sample types are nonpolar compounds from water and aqueous biological fluids.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 11% carbon loading and endcapped.

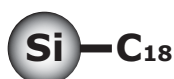
### CNWBOND LC-C18 SPE Cartridge

Art.	Description	Package
2.CA0950.0001	50mg, 1mL	100 pcs
2.CA0951.0001	100mg, 1mL	100 pcs
2.CA0952.0001	200mg, 3mL	50 pcs
2.CA0953.0001	500mg, 3mL	50 pcs
2.CA0954.0001	500mg, 6mL	30 pcs
2.CA0955.0001	1g, 6mL	30 pcs
2.CA0956.0001	2g, 6mL	30 pcs
2.CA0957.0001	1g, 10mL	20 pcs
2.CA0958.0001	2g, 10mL	20 pcs
2.CA0959.0001	5g, 35mL	20 pcs
2.CA0960.0001	10g, 35mL	20 pcs
2.CA0961.0001	10g, 60mL	16 pcs
2.CA0962.0001	20g, 60mL	16 pcs

### CNWBOND LC-C18 SPE Bulk Packing

Art.	Description	Package
2.CA0901.0001	-	100 g

## CNWBOND C18-ne



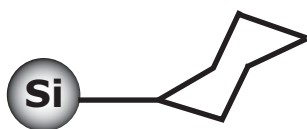
CNWBOND C18-ne is a non-endcapped octadecyl bonded phase that enables the silica surface to be more active. The silanol activity permits fractionation of metabolites and enhances retention of basic compounds compared with endcapped C18. So its retention mechanism includes moderately nonpolar and polar secondary interactions, typically it is used for extracting compounds from biological matrices and aqueous samples.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 17% carbon loading and non-endcapped.

### CNWBOND C18-ne SPE Cartridge

Art.	Description	Package
2.CA1050.0001	50mg, 1mL	100 pcs
2.CA1051.0001	100mg, 1mL	100 pcs
2.CA1052.0001	200mg, 3mL	50 pcs
2.CA1053.0001	500mg, 3mL	50 pcs
2.CA1054.0001	500mg, 6mL	30 pcs
2.CA1055.0001	1g, 6mL	30 pcs
2.CA1056.0001	2g, 6mL	30 pcs
2.CA1057.0001	1g, 10mL	20 pcs
2.CA1058.0001	2g, 10mL	20 pcs
2.CA1059.0001	5g, 35mL	20 pcs
2.CA1060.0001	10g, 35mL	20 pcs
2.CA1061.0001	10g, 60mL	16 pcs
2.CA1062.0001	20g, 60mL	16 pcs



**CNWBOND C18-ne SPE Bulk Packing**

Art.	Description	Package
2.CA1001.0001	-	100 g

**CNWBOND CYH**

CNWBOND CYH (Cyclohexyl) is a sorbent of medium polarity used in reversed-phase chromatography. The properties of CH functional groups have ability to retain polar analytes such as phenol from aqueous matrices, because it has a different selectivity than the other nonpolar sorbent like C18, C8, C4 and Phenyl, it is usually used when those nonpolar sorbents fail to provide the desired selectivity.

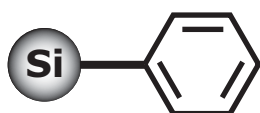
40-63 $\mu$ m irregular shaped and acid washed silica, 60Å mean pore size, 10% carbon loading and endcapped.

**CNWBOND CYH SPE Cartridge**

Art.	Description	Package
2.CA1150.0001	50mg, 1mL	100 pcs
2.CA1151.0001	100mg, 1mL	100 pcs
2.CA1152.0001	200mg, 3mL	50 pcs
2.CA1153.0001	500mg, 3mL	50 pcs
2.CA1154.0001	500mg, 6mL	30 pcs
2.CA1155.0001	1g, 6mL	30 pcs
2.CA1156.0001	2g, 6mL	30 pcs
2.CA1157.0001	1g, 10mL	20 pcs
2.CA1158.0001	2g, 10mL	20 pcs
2.CA1159.0001	5g, 35mL	20 pcs
2.CA1160.0001	10g, 35mL	20 pcs
2.CA1161.0001	10g, 60mL	16 pcs
2.CA1162.0001	20g, 60mL	16 pcs

**CNWBOND CYH SPE Bulk Packing**

Art.	Description	Package
2.CA1101.0001	-	100 g

**CNWBOND PHE**

CNWBOND PHE (Phenyl) sorbent has medium polarity used in nonpolar extractions. It has similar retention to C8 but with a different selectivity especially for planar and conjugated molecules containing aromatics and fatty acids because of its electron density of aromatic ring.

40-63 $\mu$ m irregular shaped and acid washed silica, 60Å mean pore size, 9% carbon loading and endcapped.

**CNWBOND PHE SPE Cartridge**

Art.	Description	Package
2.CA1250.0001	50mg, 1mL	100 pcs
2.CA1251.0001	100mg, 1mL	100 pcs
2.CA1252.0001	200mg, 3mL	50 pcs
2.CA1253.0001	500mg, 3mL	50 pcs
2.CA1254.0001	500mg, 6mL	30 pcs
2.CA1255.0001	1g, 6mL	30 pcs
2.CA1256.0001	2g, 6mL	30 pcs
2.CA1257.0001	1g, 10mL	20 pcs

Art.	Description	Package
2.CA1258.0001	2g, 10mL	20 pcs
2.CA1259.0001	5g, 35mL	20 pcs
2.CA1260.0001	10g, 35mL	20 pcs
2.CA1261.0001	10g, 60mL	16 pcs
2.CA1262.0001	20g, 60mL	16 pcs

**CNWBOND PHE SPE Bulk Packing**

Art.	Description	Package
2.CA1201.0001	-	100 g

**CNWBOND Si**

CNWBOND Silica is the most polar sorbent presenting a slightly acidic character, it is one of the best sorbents available for selectively separating analytes of very similar structure. CNWBOND Si is often used to extract various compounds from non-polar solvents using hydrogen bonding, then accomplishing the elution successively with increasing the solvent polarity. It has excellent capacity for removing target molecules from reaction by-products and excess reagents.

40-63µm irregular shaped and unbonded acid washed silica, 60Å mean pore size and non-encapped.

**CNWBOND Si SPE Cartridge**

Art.	Description	Package
2.CA1350.0001	50mg, 1mL	100 pcs
2.CA1351.0001	100mg, 1mL	100 pcs
2.CA1352.0001	200mg, 3mL	50 pcs
2.CA1353.0001	500mg, 3mL	50 pcs
2.CA1354.0001	500mg, 6mL	30 pcs
2.CA1355.0001	1g, 6mL	30 pcs
2.CA1356.0001	2g, 6mL	30 pcs
2.CA1357.0001	1g, 10mL	20 pcs
2.CA1358.0001	2g, 10mL	20 pcs
2.CA1359.0001	5g, 35mL	20 pcs
2.CA1360.0001	10g, 35mL	20 pcs
2.CA1361.0001	10g, 60mL	16 pcs
2.CA1362.0001	20g, 60mL	16 pcs

**CNWBOND Si SPE Bulk Packing**

Art.	Description	Package
2.CA1301.0001	-	100 g

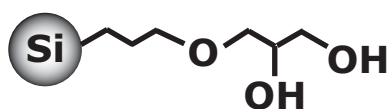
**CNWBOND CN**

CNWBOND CN (Cyano) can be used both in normal and reversed-phase chromatography as its less polar compared to silica and less hydrophobic compared to C18 and C8. The sorbent is usually used to extract acidic, neutral, and basic compounds from aqueous solutions.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 7% carbon loading and encapped.

**CNWBOND CN SPE Cartridge**

Art.	Description	Package
2.CA1450.0001	50mg, 1mL	100 pcs



Art.	Description	Package
2.CA1451.0001	100mg, 1mL	100 pcs
2.CA1452.0001	200mg, 3mL	50 pcs
2.CA1453.0001	500mg, 3mL	50 pcs
2.CA1454.0001	500mg, 6mL	30 pcs
2.CA1455.0001	1g, 6mL	30 pcs
2.CA1456.0001	2g, 6mL	30 pcs
2.CA1457.0001	1g, 10mL	20 pcs
2.CA1458.0001	2g, 10mL	20 pcs
2.CA1459.0001	5g, 35mL	20 pcs
2.CA1460.0001	10g, 35mL	20 pcs
2.CA1461.0001	10g, 60mL	16 pcs
2.CA1462.0001	20g, 60mL	16 pcs

#### CNWBOND CN SPE Bulk Packing

Art.	Description	Package
2.CA1401.0001	-	100 g

### CNWBOND Diol

CNWBOND Diol is used as polar sorbent in normal phase, which has the ability to form hydrogen bonds and the capacity to separate structural isomers like unbonded silica. However, it also has a different selectivity than bare silica gel and slight modifications in the composition of the solvent mixture may be necessary to obtain a similar retention. Usually, it is utilized for isolation of drugs and metabolites from physiological fluids.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 7% carbon loading and non-endcapped.

#### CNWBOND Diol SPE Cartridge

Art.	Description	Package
2.CA2050.0001	50mg, 1mL	100 pcs
2.CA2051.0001	100mg, 1mL	100 pcs
2.CA2052.0001	200mg, 3mL	50 pcs
2.CA2053.0001	500mg, 3mL	50 pcs
2.CA2054.0001	500mg, 6mL	30 pcs
2.CA2055.0001	1g, 6mL	30 pcs
2.CA2056.0001	2g, 6mL	30 pcs
2.CA2057.0001	1g, 10mL	20 pcs
2.CA2058.0001	2g, 10mL	20 pcs
2.CA2059.0001	5g, 35mL	20 pcs
2.CA2060.0001	10g, 35mL	20 pcs
2.CA2061.0001	10g, 60mL	16 pcs
2.CA2062.0001	20g, 60mL	16 pcs

#### CNWBOND Diol SPE Bulk Packing

Art.	Description	Package
2.CA2001.0001	-	100 g

### CNWBOND NH<sub>2</sub>



CNWBOND NH<sub>2</sub> is an aminopropyl phase that is very polar in nature utilizing both hydrogen bonding and anion exchange. Since the pK<sub>a</sub> of NH<sub>2</sub> is 9.8, when used at pH  $\leq$  7.8, the functional groups are positively charged. Therefore, it is a weaker anion exchanger for retention of very strong anions such as sulfonic acids which may be retained irreversibly on SAX. Its typical application includes separation of peptides, drugs and metabolites from physiological fluids, and also it is used for extraction of mono- and

polysaccharides, steroids, cholesterol and triglycerides.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 1.6 meq/g ion exchange capacity and endcapped.

#### CNWBOND NH<sub>2</sub> SPE Cartridge

Art.	Description	Package
2.CA2150.0001	50mg, 1mL	100 pcs
2.CA2151.0001	100mg, 1mL	100 pcs
2.CA2152.0001	200mg, 3mL	50 pcs
2.CA2153.0001	500mg, 3mL	50 pcs
2.CA2154.0001	500mg, 6mL	30 pcs
2.CA2155.0001	1g, 6mL	30 pcs
2.CA2156.0001	2g, 6mL	30 pcs
2.CA2157.0001	1g, 10mL	20 pcs
2.CA2158.0001	2g, 10mL	20 pcs
2.CA2159.0001	5g, 35mL	20 pcs
2.CA2160.0001	10g, 35mL	20 pcs
2.CA2161.0001	10g, 60mL	16 pcs
2.CA2162.0001	20g, 60mL	16 pcs

#### CNWBOND NH<sub>2</sub> SPE Bulk Packing

Art.	Description	Package
2.CA2101.0001	-	100 g

### CNWBOND NH<sub>2</sub>-ne



CNWBOND NH<sub>2</sub>-ne is non-encapped of CNWBOND NH<sub>2</sub>. Non-encapped of NH<sub>2</sub> is similar to that with encapped aminopropyl, and it has additional retention of polar and cationic compounds.

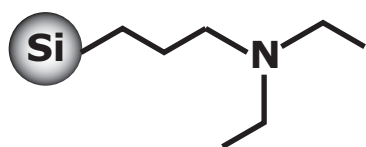
40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 1.6 meq/g ion exchange capacity and non-encapped.

#### CNWBOND NH<sub>2</sub>-ne SPE Cartridge

Art.	Description	Package
2.CA2250.0001	50mg, 1mL	100 pcs
2.CA2251.0001	100mg, 1mL	100 pcs
2.CA2252.0001	200mg, 3mL	50 pcs
2.CA2253.0001	500mg, 3mL	50 pcs
2.CA2254.0001	500mg, 6mL	30 pcs
2.CA2255.0001	1g, 6mL	30 pcs
2.CA2256.0001	2g, 6mL	30 pcs
2.CA2257.0001	1g, 10mL	20 pcs
2.CA2258.0001	2g, 10mL	20 pcs
2.CA2259.0001	5g, 35mL	20 pcs
2.CA2260.0001	10g, 35mL	20 pcs
2.CA2261.0001	10g, 60mL	16 pcs
2.CA2262.0001	20g, 60mL	16 pcs

#### CNWBOND NH<sub>2</sub>-ne SPE Bulk Packing

Art.	Description	Package
2.CA2201.0001	-	100 g



## CNWBOND WAX

CNWBOND WAX has some resemblance to CNWBOND NH<sub>2</sub> and CNWBOND PSA in its properties. It has a pKa of 10.5 because of diethylaminopropyl functional group, and is preferred over CNWBOND SAX when performing release of interest compounds which has strong ions. The additional carbon chains make WAX a more nonpolar character than NH<sub>2</sub>, and even less polar than C2 and CN.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 1.2 meq/g ion exchange capacity and endcapped.

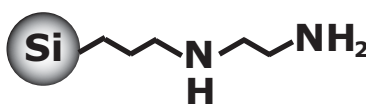
### CNWBOND WAX SPE Cartridge

Art.	Description	Package
2.CA2350.0001	50mg, 1mL	100 pcs
2.CA2351.0001	100mg, 1mL	100 pcs
2.CA2352.0001	200mg, 3mL	50 pcs
2.CA2353.0001	500mg, 3mL	50 pcs
2.CA2354.0001	500mg, 6mL	30 pcs
2.CA2355.0001	1g, 6mL	30 pcs
2.CA2356.0001	2g, 6mL	30 pcs
2.CA2357.0001	1g, 10mL	20 pcs
2.CA2358.0001	2g, 10mL	20 pcs
2.CA2359.0001	5g, 35mL	20 pcs
2.CA2360.0001	10g, 35mL	20 pcs
2.CA2361.0001	10g, 60mL	16 pcs
2.CA2362.0001	20g, 60mL	16 pcs

### CNWBOND WAX SPE Bulk Packing

Art.	Description	Package
2.CA2301.0001	-	100 g

## CNWBOND PSA



CNWBOND PSA is similar to CNWBOND NH<sub>2</sub> in terms of selectivity. As an anion exchange sorbent bonded with ethylenediamine-N-propyl, PSA has two amine groups that offer much higher ionic capacity, and exhibits a pKa of 10.1 and 10.9. Therefore, PSA has 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, its functional group is a very good bidentate ligand making PSA an excellent sorbent for chelation.

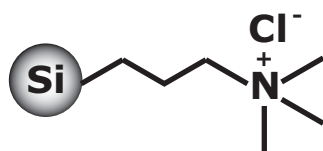
40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 1.4 meq/g ion exchange capacity and endcapped.

### CNWBOND PSA SPE Cartridge

Art.	Description	Package
2.CA2450.0001	50mg, 1mL	100 pcs
2.CA2451.0001	100mg, 1mL	100 pcs
2.CA2452.0001	200mg, 3mL	50 pcs
2.CA2453.0001	500mg, 3mL	50 pcs
2.CA2454.0001	500mg, 6mL	30 pcs
2.CA2455.0001	1g, 6mL	30 pcs
2.CA2456.0001	2g, 6mL	30 pcs
2.CA2457.0001	1g, 10mL	20 pcs
2.CA2458.0001	2g, 10mL	20 pcs
2.CA2459.0001	5g, 35mL	20 pcs
2.CA2460.0001	10g, 35mL	20 pcs
2.CA2461.0001	10g, 60mL	16 pcs
2.CA2462.0001	20g, 60mL	16 pcs

**CNWBOND PSA SPE Bulk Packing**

Art.	Description	Package
2.CA2401.0001	-	100 g

**CNWBOND SAX**

CNWBOND SAX is a strongest anion exchange sorbent because of its quaternary amine functional group. The sorbent is always positive charged, which is good choice for retention of weaker anions such as carboxylic acids that may not retain strongly enough on WAX or NH<sub>2</sub> and PSA. Since the chloride counter ion is bound to the ammonium, it may be suited to activate the ion exchanger by conditioning it with appropriate buffers.

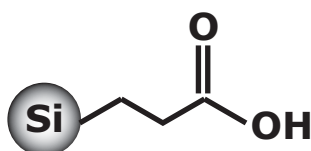
40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 1.1 meq/g ion exchange capacity and non-encapped.

**CNWBOND SAX SPE Cartridge**

Art.	Description	Package
2.CA2550.0001	50mg, 1mL	100 pcs
2.CA2551.0001	100mg, 1mL	100 pcs
2.CA2552.0001	200mg, 3mL	50 pcs
2.CA2553.0001	500mg, 3mL	50 pcs
2.CA2554.0001	500mg, 6mL	30 pcs
2.CA2555.0001	1g, 6mL	30 pcs
2.CA2556.0001	2g, 6mL	30 pcs
2.CA2557.0001	1g, 10mL	20 pcs
2.CA2558.0001	2g, 10mL	20 pcs
2.CA2559.0001	5g, 35mL	20 pcs
2.CA2560.0001	10g, 35mL	20 pcs
2.CA2561.0001	10g, 60mL	16 pcs
2.CA2562.0001	20g, 60mL	16 pcs

**CNWBOND SAX SPE Bulk Packing**

Art.	Description	Package
2.CA2501.0001	-	100 g

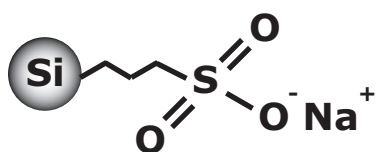
**CNWBOND WCX**

CNWBOND WCX is a carboxy propyl functionalized silica which has a medium polarity. It is primarily used as a weak cation exchanger that does not require extreme basic conditions for elution because of its 4.5 pKa. CNWBOND WCX is often the best choice for cation exchange especially when dialing with very strong cations in case of making release of the compound of interest on SCX is difficult because of the strong interaction between the two strong ions.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size, 1.4 meq/g ion exchange capacity and endcapped.

**CNWBOND WCX SPE Cartridge**

Art.	Description	Package
2.CA2650.0001	50mg, 1mL	100 pcs
2.CA2651.0001	100mg, 1mL	100 pcs
2.CA2652.0001	200mg, 3mL	50 pcs
2.CA2653.0001	500mg, 3mL	50 pcs
2.CA2654.0001	500mg, 6mL	30 pcs
2.CA2655.0001	1g, 6mL	30 pcs



Art.	Description	Package
2.CA2656.0001	2g, 6mL	30 pcs
2.CA2657.0001	1g, 10mL	20 pcs
2.CA2658.0001	2g, 10mL	20 pcs
2.CA2659.0001	5g, 35mL	20 pcs
2.CA2660.0001	10g, 35mL	20 pcs
2.CA2661.0001	10g, 60mL	16 pcs
2.CA2662.0001	20g, 60mL	16 pcs

#### CNWBOND WCX SPE Bulk Packing

Art.	Description	Package
2.CA2601.0001	-	100 g

### CNWBOND PRS

CNWBOND PRS is a strong cation exchange sorbent which is similar to CNWBOND SCX but slightly less acidic. It maintains a negative charge throughout the pH scale, so it is most effective for weaker cations such as pyridinium compounds. Its typical application includes malachite green and other basic molecules from water and biological samples.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 1.0 meq/g ion exchange capacity and endcapped.

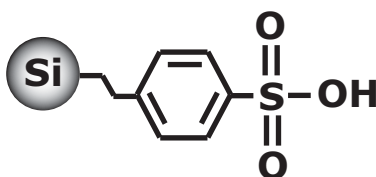
#### CNWBOND PRS SPE Cartridge

Art.	Description	Package
2.CA2750.0001	50mg, 1mL	100 pcs
2.CA2751.0001	100mg, 1mL	100 pcs
2.CA2752.0001	200mg, 3mL	50 pcs
2.CA2753.0001	500mg, 3mL	50 pcs
2.CA2754.0001	500mg, 6mL	30 pcs
2.CA2755.0001	1g, 6mL	30 pcs
2.CA2756.0001	2g, 6mL	30 pcs
2.CA2757.0001	1g, 10mL	20 pcs
2.CA2758.0001	2g, 10mL	20 pcs
2.CA2759.0001	5g, 35mL	20 pcs
2.CA2760.0001	10g, 35mL	20 pcs
2.CA2761.0001	10g, 60mL	16 pcs
2.CA2762.0001	20g, 60mL	16 pcs

#### CNWBOND PRS SPE Bulk Packing

Art.	Description	Package
2.CA2701.0001	-	100 g

### CNWBOND SCX



CNWBOND SCX is a strongest cation exchange sorbent because of its benzenesulfonic acid functional group. It has been optimized for use in organic applications, which will not dissolve in methanol or any other solvents. The presence of the benzene ring on its surface exhibits nonpolar character which is useful with compounds that has both cationic and nonpolar properties in aqueous solvent.

40-63 $\mu$ m irregular shaped and acid washed silica, 60 $\text{\AA}$  mean pore size, 0.8 meq/g ion exchange capacity and endcapped.

#### CNWBOND SCX SPE Cartridge

Art.	Description	Package
2.CA2850.0001	50mg, 1mL	100 pcs

Art.	Description	Package
2.CA2851.0001	100mg, 1mL	100 pcs
2.CA2852.0001	200mg, 3mL	50 pcs
2.CA2853.0001	500mg, 3mL	50 pcs
2.CA2854.0001	500mg, 6mL	30 pcs
2.CA2855.0001	1g, 6mL	30 pcs
2.CA2856.0001	2g, 6mL	30 pcs
2.CA2857.0001	1g, 10mL	20 pcs
2.CA2858.0001	2g, 10mL	20 pcs
2.CA2859.0001	5g, 35mL	20 pcs
2.CA2860.0001	10g, 35mL	20 pcs
2.CA2861.0001	10g, 60mL	16 pcs
2.CA2862.0001	20g, 60mL	16 pcs

#### CNWBOND SCX SPE Bulk Packing

Art.	Description	Package
2.CA2801.0001	-	100 g

### CNWBOND C8/SCX

CNWBOND C8/SCX sorbent contains both octyl (C8) and benzenesulfonic acid (SCX) bondings, which exhibits dual retention mechanism for isolating of neutral, basic, acidic and zwitterionic compounds. Its mixed-mode cation exchange character develops for superior selectivity of sample clean up when extracting basic and neutral compounds from aqueous solutions, typically drugs and metabolites from physiological fluids.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size and endcapped.

#### CNWBOND C8/SCX SPE Cartridge

Art.	Description	Package
2.CA2950.0001	50mg, 1mL	100 pcs
2.CA2951.0001	100mg, 1mL	100 pcs
2.CA2952.0001	200mg, 3mL	50 pcs
2.CA2953.0001	500mg, 3mL	50 pcs
2.CA2954.0001	500mg, 6mL	30 pcs
2.CA2955.0001	1g, 6mL	30 pcs
2.CA2956.0001	2g, 6mL	30 pcs
2.CA2957.0001	1g, 10mL	20 pcs
2.CA2958.0001	2g, 10mL	20 pcs
2.CA2959.0001	5g, 35mL	20 pcs
2.CA2960.0001	10g, 35mL	20 pcs
2.CA2961.0001	10g, 60mL	16 pcs
2.CA2962.0001	20g, 60mL	16 pcs

### CNWBOND C8/SAX

CNWBOND C8/SAX sorbent contains both octyl (C8) and quaternary amine (SAX) bondings, which exhibits dual retention mechanism for isolating of neutral, basic, acidic and zwitterionic compounds. Its mixed-mode anion exchange character develops for superior selectivity of sample clean up when extracting acidic and neutral compounds from aqueous solutions, typically salicylic acid, ibuprofen, acetaminophen, drugs and metabolites from physiological fluids.

40-63µm irregular shaped and acid washed silica, 60Å mean pore size and endcapped.

#### CNWBOND C8/SAX SPE Cartridge

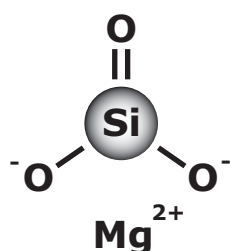
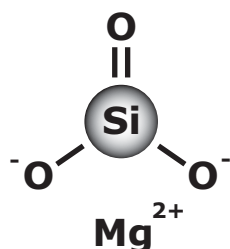
Art.	Description	Package
2.CA3050.0001	50mg, 1mL	100 pcs



SPE Tube Adapter

For more information about this product, please refer to page 29.





Art.	Description	Package
2.CA3051.0001	100mg, 1mL	100 pcs
2.CA3052.0001	200mg, 3mL	50 pcs
2.CA3053.0001	500mg, 3mL	50 pcs
2.CA3054.0001	500mg, 6mL	30 pcs
2.CA3055.0001	1g, 6mL	30 pcs
2.CA3056.0001	2g, 6mL	30 pcs
2.CA3057.0001	1g, 10mL	20 pcs
2.CA3058.0001	2g, 10mL	20 pcs
2.CA3059.0001	5g, 35mL	20 pcs
2.CA3060.0001	10g, 35mL	20 pcs
2.CA3061.0001	10g, 60mL	16 pcs
2.CA3062.0001	20g, 60mL	16 pcs

### CNWBOND Florisil

CNWBOND Florisil is a magnesia-loaded silica gel, which is a polar sorbent presenting slightly basic character used to extract polar to moderately polar compounds from non-polar matrices. It is utilized for the separation of chlorinated pesticides, amines, herbicides, PCBs, ketones, organic acids and phenols.

100-200 mesh irregular shape and 289 m<sup>2</sup>/g surface area.

#### CNWBOND Florisil SPE Cartridge

Art.	Description	Package
2.CA1550.0001	50mg, 1mL	100 pcs
2.CA1551.0001	100mg, 1mL	100 pcs
2.CA1552.0001	200mg, 3mL	50 pcs
2.CA1553.0001	500mg, 3mL	50 pcs
2.CA1554.0001	500mg, 6mL	30 pcs
2.CA1555.0001	1g, 6mL	30 pcs
2.CA1556.0001	2g, 6mL	30 pcs
2.CA1557.0001	1g, 10mL	20 pcs
2.CA1558.0001	2g, 10mL	20 pcs
2.CA1559.0001	5g, 35mL	20 pcs
2.CA1560.0001	10g, 35mL	20 pcs
2.CA1561.0001	10g, 60mL	16 pcs
2.CA1562.0001	20g, 60mL	16 pcs

#### CNWBOND Florisil SPE Bulk Packing

Art.	Description	Package
2.CA1501.0001	-	100 g

### CNWBOND Florisil PR

CNWBOND Florisil PR is similar to CNWBOND Florisil but with different mesh size which is suitable for US method EPA 608. It is utilized for the separation of chlorinated pesticides, amines, herbicides, PCBs, ketones, organic acids and phenols.

60-100 mesh irregular shape.

#### CNWBOND Florisil PR SPE Cartridge

Art.	Description	Package
2.CA3750.0001	50mg, 1mL	100 pcs
2.CA3751.0001	100mg, 1mL	100 pcs

Art.	Description	Package
2.CA3752.0001	200mg, 3mL	50 pcs
2.CA3753.0001	500mg, 3mL	50 pcs
2.CA3754.0001	500mg, 6mL	30 pcs
2.CA3755.0001	1g, 6mL	30 pcs
2.CA3756.0001	2g, 6mL	30 pcs
2.CA3757.0001	1g, 10mL	20 pcs
2.CA3758.0001	2g, 10mL	20 pcs
2.CA3759.0001	5g, 35mL	20 pcs
2.CA3760.0001	10g, 35mL	20 pcs
2.CA3761.0001	10g, 60mL	16 pcs
2.CA3762.0001	20g, 60mL	16 pcs

#### CNWBOND Florisil PR SPE Bulk Packing

Art.	Description	Package
2.CA3701.0001	-	100 g

### CNWBOND Alumina-A



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

100-300 mesh irregular shape and acidic pH ~4.5 (Brockman Act. I)

#### CNWBOND Alumina-A SPE Cartridge

Art.	Description	Package
2.CA1750.0001	50mg, 1mL	100 pcs
2.CA1751.0001	100mg, 1mL	100 pcs
2.CA1752.0001	200mg, 3mL	50 pcs
2.CA1753.0001	500mg, 3mL	50 pcs
2.CA1749.0001	1g, 3mL	50 pcs
2.CA1754.0001	500mg, 6mL	30 pcs
2.CA1755.0001	1g, 6mL	30 pcs
2.CA1756.0001	2g, 6mL	30 pcs
2.CA1757.0001	1g, 10mL	20 pcs
2.CA1758.0001	2g, 10mL	20 pcs
2.CA1759.0001	5g, 35mL	20 pcs
2.CA1760.0001	10g, 35mL	20 pcs
2.CA1761.0001	10g, 60mL	16 pcs
2.CA1762.0001	20g, 60mL	16 pcs

#### CNWBOND Alumina-A SPE Bulk Packing

Art.	Description	Package
2.CA1701.0001	-	100 g

### CNWBOND Alumina-N



CNWBOND Alumina-N is an extremely polar sorbent which is similar to silica, but Alumina-N is more stable under high pH conditions than unbonded silica. The sorbent has an electrically neutral surface that is retentive for electron-rich compounds like aromatic species and aliphatic amines, and compounds with electronegative groups like oxygen, phosphorus and sulfur atoms. It is utilized for extracting both nonpolar and polar compounds from aqueous and nonaqueous matrices respectively.

100-300 mesh irregular shape and neutral pH ~7.0 (Brockman Act. I)



### CNWBOND Alumina-N SPE Cartridge

Art.	Description	Package
2.CA1850.0001	50mg, 1mL	100 pcs
2.CA1851.0001	100mg, 1mL	100 pcs
2.CA1852.0001	200mg, 3mL	50 pcs
2.CA1853.0001	500mg, 3mL	50 pcs
2.CA1849.0001	1g, 3mL	50 pcs
2.CA1854.0001	500mg, 6mL	30 pcs
2.CA1855.0001	1g, 6mL	30 pcs
2.CA1856.0001	2g, 6mL	30 pcs
2.CA1857.0001	1g, 10mL	20 pcs
2.CA1858.0001	2g, 10mL	20 pcs
2.CA1859.0001	5g, 35mL	20 pcs
2.CA1860.0001	10g, 35mL	20 pcs
2.CA1861.0001	10g, 60mL	16 pcs
2.CA1862.0001	20g, 60mL	16 pcs

### CNWBOND Alumina-N SPE Cartridge for Sudan Dye

Art.	Description	Package
2.CA1808.0001	1g, 3mL	50 pcs

### CNWBOND Alumina-N SPE Bulk Packing

Art.	Description	Package
2.CA1801.0001	-	100 g

## CNWBOND Alumina-B

CNWBOND Alumina-B exhibits Lewis base properties, which makes the sorbent more retentive towards electron-donors compounds. Furthermore, the surface of Alumina-B has a slightly anionic nature through pretreatment with acidic solutions, so it is suitable for retention of neutral and cationic compounds. Strong hydrogen bonding on Alumina-B is also effective for polar cations.

100-300 mesh irregular shape and basic pH ~9.5 (Brockman Act. I)

### CNWBOND Alumina-B SPE Cartridge

Art.	Description	Package
2.CA1950.0001	50mg, 1mL	100 pcs
2.CA1951.0001	100mg, 1mL	100 pcs
2.CA1952.0001	200mg, 3mL	50 pcs
2.CA1953.0001	500mg, 3mL	50 pcs
2.CA1949.0001	1g, 3mL	50 pcs
2.CA1954.0001	500mg, 6mL	30 pcs
2.CA1955.0001	1g, 6mL	30 pcs
2.CA1956.0001	2g, 6mL	30 pcs
2.CA1957.0001	1g, 10mL	20 pcs
2.CA1958.0001	2g, 10mL	20 pcs
2.CA1959.0001	5g, 35mL	20 pcs
2.CA1960.0001	10g, 35mL	20 pcs
2.CA1961.0001	10g, 60mL	16 pcs
2.CA1962.0001	20g, 60mL	16 pcs

### CNWBOND Alumina-B SPE Bulk Packing

Art.	Description	Package
2.CA1901.0001	-	100 g



### CNWBOND Celite545

CNWBOND Celite545 is a filter aid, treated with sodium carbonate, calcined diatomaceous silica. It is usually prepared for chromatography and other laboratory applications.

≤125µm and pH>8.5.

#### CNWBOND Celite545 SPE Cartridge

Art.	Description	Package
2.CA4099.0001	4g, 12mL	20 pcs

#### CNWBOND Celite 545/Na<sub>2</sub>SO<sub>4</sub> SPE Cartridge

Art.	Description	Package
2.CA5489.0001	4g/2g, 12mL	30 pcs

#### CNWBOND Celite545 SPE Bulk Packing

Art.	Description	Package
2.CA4001.0001	-	100 g

### CNWBOND Coconut Charcoal

CNWBOND Coconut Charcoal is a activated coconut charcoal which is developed specifically for EPA Method 521 (Determination of Nitrosamines in Drinking Water) and EPA Method 522 (Determination of 1,4-Dioxane in Drinking Water)

80-120 mesh.

#### CNWBOND Coconut Charcoal SPE Cartridge

Art.	Description	Package
2.CA4256.0001	2g, 6mL	30 pcs

#### CNWBOND Coconut Charcoal SPE Bulk Packing

Art.	Description	Package
2.CA4201.0001	-	100 g

### CNWBOND Carbon-GCB

CNWBOND Carbon-GCB is the type of graphitized non-porous carbon, which surface comprises of hexagonal ring structures, interconnected and layered into graphitic sheets. It has extreme affinity for organic polar and non-polar compounds from both non-polar and polar matrices when used under reversed-phase conditions, while its special structure has a strong retention towards planar molecules. As its special character, it is widely utilized for replacement of C8 and C18 coated on silica when extraction for polar pesticides in water, those C8 and C18 have shown very poor efficiency of polar compounds even lower than that of technique of liquid/liquid extraction. Furthermore, non-porous nature of the carbon-GCB allows for rapid processing because of adsorption does not require analyte dispersion into solid phase pores. Its typical application includes isolation/removal of pigments, sterols, phenols, chloroanilines, organochlorine pesticides, Carbamates, Triazine, Herbicides and Chloroanilines from various matrices like ground water, fruits and vegetables etc.

100 m<sup>2</sup>/g surface area and 120-400 mesh.

#### CNWBOND Carbon-GCB SPE Cartridge

Art.	Description	Package
2.CA1650.0001	50mg, 1mL	100 pcs
2.CA1651.0001	100mg, 1mL	100 pcs



GCB SPE Column

GCB-NH<sub>2</sub> SPE Column

GC Columns

For more information about this product, please refer to pages 59 - 74

Art.	Description	Package
2.CA1663.0001	250mg, 3mL	50 pcs
2.CA1664.0001	250mg, 6mL	30 pcs
2.CA1654.0001	500mg, 6mL	30 pcs
2.CA1657.0001	1g, 10mL	20 pcs
2.CA1658.0001	2g, 10mL	20 pcs
2.CA1665.0001	2g, 35mL	20 pcs
2.CA1659.0001	5g, 35mL	20 pcs
2.CA1661.0001	10g, 60mL	16 pcs
2.CA1662.0001	20g, 60mL	16 pcs

#### CNWBOND Carbon-GCB SPE Bulk Packing

Art.	Description	Package
2.CA1600.0001	-	50 g

### CNWBOND GCB/NH<sub>2</sub>

CNWBOND GCB/NH<sub>2</sub> is a dual layer SPE cartridge that contains CNWBOND Carbon-GCB (upper layer) and CNWBOND NH<sub>2</sub> (lower layer) SPE sorbents. It combines advantages with both GCB and NH<sub>2</sub> sorbents, Carbon-GCB has a strong affinity towards planar molecules, pigments like chlorophyll and carotinoids, sterols commonly in foods and natural products, while NH<sub>2</sub> can effectively retains fatty acids, organic acids, some polar pigments and sugars in food matrices. Therefore, CNWBOND GCB/NH<sub>2</sub> offers superior clean up of multi-residue pesticide from food like meats, fruits, vegetables etc.

#### CNWBOND GCB/NH<sub>2</sub> SPE Cartridge

Art.	Description	Package
2.CA5066.0001	200mg/200mg, 3mL	50 pcs
2.CA5048.0001	250mg/500mg, 3mL	50 pcs
2.CA5067.0001	200mg/200mg, 6mL	30 pcs
2.CA5068.0001	300mg/600mg, 6mL	30 pcs
2.CA5069.0001	500mg/500mg, 6mL	30 pcs
2.CA5070.0001	500mg/300mg, 6mL	30 pcs
2.CA5071.0001	1g/500mg, 6mL	30 pcs
2.CA5072.0001	1g/500mg, 10mL	20 pcs
2.CA5073.0001	500mg/500mg, 10mL	20 pcs
2.CA5074.0001	1g/500mg, 35mL	20 pcs
2.CA5075.0001	500mg/500mg, 35mL	20 pcs
2.CA5076.0001	1g/1g, 35mL	20 pcs

### CNWBOND GCB/PSA

CNWBOND GCB/PSA is a dual layer SPE cartridge that contains CNWBOND Carbon-GCB (upper layer) and CNWBOND PSA (lower layer) SPE sorbents. It combines advantages with both GCB and PSA sorbents, Carbon-GCB has a strong affinity towards planar molecules, pigments like chlorophyll and carotinoids, sterols commonly in foods and natural products, while PSA can effectively retains fatty acids, organic acids, some polar pigments and sugars in food matrices. It is similar to CNWBOND GCB/NH<sub>2</sub>, but GCB/PSA has more retention for analytes because its PSA in the lower layer contains both primary and secondary amines. Therefore, CNWBOND GCB/PSA offers superior clean up of multi-residue pesticide from food like meats, fruits, vegetables etc.

#### CNWBOND GCB/PSA SPE Cartridge

Art.	Description	Package
2.CA5166.0001	200mg/200mg, 3mL	50 pcs
2.CA5148.0001	250mg/500mg, 3mL	50 pcs
2.CA5167.0001	200mg/200mg, 6mL	30 pcs
2.CA5168.0001	300mg/600mg, 6mL	30 pcs

Art.	Description	Package
2.CA5169.0001	500mg/500mg, 6mL	30 pcs
2.CA5170.0001	500mg/300mg, 6mL	30 pcs
2.CA5171.0001	1g/500mg, 6mL	30 pcs
2.CA5172.0001	1g/500mg, 10mL	20 pcs
2.CA5173.0001	500mg/500mg, 10mL	20 pcs
2.CA5174.0001	1g/500mg, 35mL	20 pcs
2.CA5175.0001	500mg/500mg, 35mL	20 pcs
2.CA5176.0001	1g/1g, 35mL	20 pcs

## CNWBOND SAX/PSA

CNWBOND SAX/PSA is a dual layer SPE cartridge that contains CNWBOND SAX (upper layer) and CNWBOND PSA (lower layer) SPE sorbents. It combines advantages with both SAX and PSA sorbents, SAX has a strong affinity towards nearly all the acidic compounds in different matrices, while PSA can effectively retains fatty acids, organic acids, some polar pigments and sugars in food matrices. Therefore, CNWBOND SAX/PSA offers superior removing of matrix interference and enhancement of multi-residue pesticide from food for analysis.

### CNWBOND SAX/PSA SPE Cartridge

Art.	Description	Package
2.CA5266.0001	200mg/200mg, 3mL	50 pcs
2.CA5267.0001	200mg/200mg, 6mL	30 pcs
2.CA5268.0001	300mg/600mg, 6mL	30 pcs
2.CA5269.0001	500mg/500mg, 6mL	30 pcs
2.CA5270.0001	500mg/300mg, 6mL	30 pcs
2.CA5271.0001	1g/500mg, 6mL	30 pcs
2.CA5272.0001	1g/500mg, 10mL	20 pcs
2.CA5273.0001	500mg/500mg, 10mL	20 pcs
2.CA5274.0001	1g/500mg, 35mL	20 pcs
2.CA5275.0001	500mg/500mg, 35mL	20 pcs
2.CA5276.0001	1g/1g, 35mL	20 pcs

## CNWBOND GCB/SAX

### CNWBOND GCB/SAX SPE Cartridge

Art.	Description	Package
2.CA5388.0001	250mg/500mg, 6mL	30 pcs

## CNWBOND GCB/SAX/PSA

CNWBOND GCB/SAX/PSA is a tri-layer SPE cartridge that contains CNWBOND Carbon-GCB (upper layer), CNWBOND SAX (middle layer) and CNWBOND PSA (lower layer) SPE sorbents. It combines advantages with all the three sorbents, Carbon-GCB has a strong affinity towards planar molecules, pigments like chlorophyll and carotenoids, sterols commonly in foods and natural products, SAX offers additional ion-exchange capacity for removing and enhancement of components during analysis, PSA can effectively retains fatty acids, organic acids, some polar pigments and sugars in food matrices. Therefore, CNWBOND GCB/SAX/PSA offers superior clean up of multi-residue pesticide from food like meats, fruits, vegetables etc.

### CNWBOND GCB/SAX/PSA SPE Cartridge



Solvents for GC Residue Analysis  
For more information about this product,  
please refer to pages 144 - 146.

Art.	Description	Package
2.CA6090.0001	500mg/500mg/500mg, 10mL	20 pcs
2.CA6091.0001	500mg/400mg/600mg, 10mL	20 pcs
2.CA6092.0001	500mg/500mg/500mg, 35mL	20 pcs
2.CA6093.0001	500mg/400mg/600mg, 35mL	20 pcs

### ***CNWBOND GCB/NH<sub>2</sub>/Si***

CNWBOND GCB/NH<sub>2</sub>/Si is a tri-layer SPE cartridge that contains CNWBOND Carbon-GCB (upper layer), CNWBOND NH<sub>2</sub> (middle layer) and CNWBOND Si (lower layer) SPE sorbents. It combines advantages with all the three sorbents, Carbon-GCB has a strong affinity towards planar molecules, pigments like chlorophyll and carotinoids,

sterols commonly in foods and natural products, NH<sub>2</sub> can effectively retains fatty acids, organic acids, some polar pigments and sugars in food matrices, Si has excellent capacity for removing target molecules from reaction by-products and excess reagents. CNWBOND GCB/NH<sub>2</sub>/Si offers superior clean up of multi-residue pesticide from food like meats, fruits, vegetables etc.

#### **CNWBOND GCB/NH<sub>2</sub>/Si SPE Cartridge**

Art.	Description	Package
2.CA6190.0001	500mg/500mg/500mg, 10mL	20 pcs
2.CA6191.0001	500mg/400mg/600mg, 10mL	20 pcs
2.CA6192.0001	500mg/500mg/500mg, 35mL	20 pcs
2.CA6193.0001	500mg/400mg/600mg, 35mL	20 pcs

### ***CNWBOND Na<sub>2</sub>SO<sub>4</sub>/Florisil***

CNWBOND Na<sub>2</sub>SO<sub>4</sub>/Florisil is a dual layer SPE cartridge that contains Na<sub>2</sub>SO<sub>4</sub> (upper layer) and Florisil (lower layer). Na<sub>2</sub>SO<sub>4</sub> layer aids in removing aqueous sample residues that may hinder Florisil performance and/or subsequent GC analysis. It is Suitable for the determination of the hydrocarbon oil index in water (surface, waste, and sewage treatment plants) by GC-FID analysis.

#### **CNWBOND Na<sub>2</sub>SO<sub>4</sub>/Florisil SPE Cartridge**

Art.	Description	Package
2.CA5595.0001	2g/2g, 6mL	30 pcs

### ***Poly-Sery HLB***

Poly-Sery HLB is a hydrophilic modified copolymer which developed for a broad range of compounds from aqueous samples under reversed phase condition. The retention mechanisms of Poly-Sery HLB consist of  $\pi$ - $\pi$  and H-bonding resulting in a sorbent that has enhanced selectivity for polar and aromatic compounds. It makes your method development to be faster, easier and more effective, furthermore, it has properties of resistance to overdrying allows for more robust methodology and low UV and MS extractables for lower background and greater sensitivity. It is used for nearly all the acidic, basic, and neutral compounds because of its hydrophilic and lipophilic character.

60 $\mu$ m copolymer, 180Å mean pore size, 710m<sup>2</sup>/g surface area.

#### **Poly-Sery HLB SPE Cartridge**

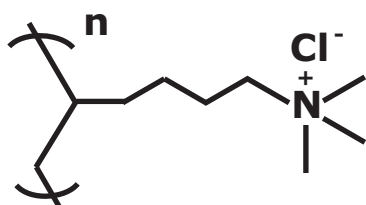
Art.	Description	Package
2.CA3177.0001	10mg, 1mL	100 pcs
2.CA3178.0001	30mg, 1mL	100 pcs
2.CA3179.0001	60mg, 3mL	50 pcs

Art.	Description	Package
2.CA3180.0001	30mg, 3mL	50 pcs
2.CA3185.0001	200mg, 6mL	30 pcs
2.CA3154.0001	500mg, 6mL	30 pcs
2.CA3182.0001	500mg, 10mL	20 pcs
2.CA3157.0001	1g, 10mL	20 pcs
2.CA3183.0001	1g, 35mL	20 pcs
2.CA3184.0001	6g, 35mL	20 pcs

#### Poly-Sery HLB SPE Bulk Packing

Art.	Description	Package
2.CA3100.0001	-	50 g

### Poly-Sery MAX



Poly-Sery MAX is a mixed-mode anion exchange and reversed phase sorbent, which has high selectivity and sensitivity for acidic and neutral compounds. Unlike traditional silica-based sorbent, its modified styrene divinylbenzene polymeric surface has hydrophilic and hydrophobic mechanisms, which is stable in pH ranges 0 to 14 and is water-wettable, therefore, it exhibits unique selectivity to cover a diverse spectrum of analytes, simplify the method development process for fast and efficient sample preparation and completely eliminate recovery or reproducibility problems. The strong anion exchange mechanism gives consistent and extremely cleaning up of acidic compounds and fractionation of bases from basic and neutral impurities. The Poly-Sery MAX is widely utilized in separation of clean acidic extracts from different matrices such as plasma, urine, plastic products and food.

40µm or 100µm copolymer, 100Å mean pore size, 600m<sup>2</sup>/g surface area and 0.3 meq/g ionic capacity.

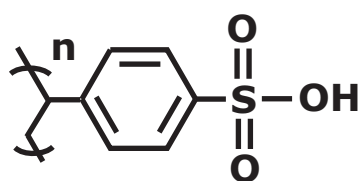
#### Poly-Sery MAX SPE Cartridge

Art.	Description	Package
2.CA3377.0001	40µm, 10mg, 1mL	100 pcs
2.CA3378.0001	40µm, 30mg, 1mL	100 pcs
2.CA3379.0001	40µm, 60mg, 3mL	50 pcs
2.CA3380.0001	40µm, 30mg, 3mL	50 pcs
2.CA3381.0001	40µm, 150mg, 6mL	30 pcs
2.CA3354.0001	100µm, 500mg, 6mL	30 pcs
2.CA3382.0001	100µm, 500mg, 10mL	20 pcs
2.CA3357.0001	100µm, 1g, 10mL	20 pcs
2.CA3383.0001	100µm, 1g, 35mL	20 pcs
2.CA3384.0001	100µm, 6g, 35mL	20 pcs

#### Poly-Sery MAX SPE Bulk Packing

Art.	Description	Package
2.CA3300.0001	40µm	50 g
2.CA3310.0001	100µm	50 g

### Poly-Sery MCX



Poly-Sery MCX is a mixed-mode cation exchange and reversed phase sorbent, which has high selectivity and sensitivity for basic and neutral compounds. Unlike traditional silica-based sorbent, its modified styrene divinylbenzene polymeric surface has hydrophilic and hydrophobic mechanisms, which is stable in pH ranges 0 to 14 and is water-wettable, therefore, it exhibits unique selectivity to cover a diverse spectrum of analytes, simplify the method development process for fast and efficient sample preparation and completely eliminate recovery or reproducibility problems. The strong cation exchange mechanism gives consistent and extremely cleaning up of basic compounds and



fractionation of bases from acidic and neutral impurities. The Poly-Sery MCX is widely utilized in separation of clean basic extracts from different matrices such as plasma, urine, plastic products and food.

40 $\mu$ m or 100 $\mu$ m copolymer, 100 $\text{\AA}$  mean pore size, 600m<sup>2</sup>/g surface area and 0.8 meq/g ionic capacity.

#### Poly-Sery MCX SPE Cartridge

Art.	Description	Package
2.CA3277.0001	40 $\mu$ m, 10mg, 1mL	100 pcs
2.CA3278.0001	40 $\mu$ m, 30mg, 1mL	100 pcs
2.CA3279.0001	40 $\mu$ m, 60mg, 3mL	50 pcs
2.CA3280.0001	40 $\mu$ m, 30mg, 3mL	50 pcs
2.CA3281.0001	40 $\mu$ m, 150mg, 6mL	30 pcs
2.CA3254.0001	100 $\mu$ m, 500mg, 6mL	30 pcs
2.CA3282.0001	100 $\mu$ m, 500mg, 10mL	20 pcs
2.CA3257.0001	100 $\mu$ m, 1g, 10mL	20 pcs
2.CA3283.0001	100 $\mu$ m, 1g, 35mL	20 pcs
2.CA3284.0001	100 $\mu$ m, 6g, 35mL	20 pcs

#### Poly-Sery MCX SPE Bulk Packing

Art.	Description	Package
2.CA3200.0001	40 $\mu$ m	50 g
2.CA3210.0001	100 $\mu$ m	50 g

### Poly-Sery PSD

Poly-Sery PSD is a highly crosslinked, neutral, specially cleaned styrene/divinylbenzene copolymer material that is used for retaining hydrophobic compounds which contain some hydrophilic functionality under reversed phase conditions. This material can resist extreme pH condition, it is typically used for aromatics and phenols from aqueous matrices. Phenols are sometimes difficult to retain on silica-based C18 under reversed phase conditions, mainly due to their greater solubility in water than in organic matrices.

80-160 $\mu$ m copolymer, 110-175 $\text{\AA}$  mean pore size and 900m<sup>2</sup>/g surface area.

#### Poly-Sery PSD SPE Cartridge

Art.	Description	Package
2.CA3550.0001	50mg, 1mL	100 pcs
2.CA3551.0001	100mg, 1mL	100 pcs
2.CA3563.0001	250mg, 3mL	50 pcs
2.CA3564.0001	250mg, 6mL	30 pcs
2.CA3554.0001	500mg, 6mL	30 pcs
2.CA3557.0001	1g, 10mL	20 pcs
2.CA3558.0001	2g, 10mL	20 pcs
2.CA3565.0001	2g, 35mL	20 pcs
2.CA3559.0001	5g, 35mL	20 pcs
2.CA3561.0001	10g, 60mL	16 pcs
2.CA3562.0001	20g, 60mL	16 pcs

#### Poly-Sery PSD SPE Bulk Packing

Art.	Description	Package
2.CA3500.0001	-	50 g

### Poly-Sery XAD2

Poly-Sery XAD2 is a polyaromatic adsorbent resin which is nonionic macroreticular styrene-divinylbenzene matrix usually used for adsorbing and releasing ionic species through hydrophobic and polar interactions under isocratic conditions. Its typical

application is hydrophobic compounds up to MW 20,000 like phenols, organic removal, surfactants, aroma compounds, antibiotic recovery and sometimes used as support for catalyst or metals removal.

20-60 mesh, 90Å mean pore size and 300m<sup>2</sup>/g surface area.

#### Poly-Sery XAD2 SPE Cartridge

Art.	Description	Package
2.CA3686.0001	300mg, 3mL	50 pcs

#### Poly-Sery XAD2 SPE Bulk Packing

Art.	Description	Package
2.CA3601.0001	-	100 g

## Dispersive SPE Products

Dispersive SPE (dSPE), also named "QuEChERS" method (**Quick Easy, Cheap, Effective, Rugged and Safe**), is a sample prep technique that is more and more popularly used in the area of multi-class, multi-residue pesticide analysis in food and agricultural products.

In dSPE, food or agricultural samples are first extracted with an aqueous miscible solvent (e.g., acetonitrile) in the presence of high amounts of salts (e.g., sodium chloride and magnesium sulfate) and/or buffering agents (e.g. citrate) to induce liquid phase separation and stabilize acid and base labile pesticides, respectively. Upon shaking and centrifugation, an aliquot of the organic phase is subjected to further clean up using SPE. In dispersive SPE, clean up is facilitated by mixing bulk amounts of SPE (e.g., CNWBOND PSA, Carbon-GCB, and/or HC-C18) with the extract. After sample clean up, the mixture is centrifuged and the resulting supernatant can either be analyzed directly or can be subjected to minor further treatment before analysis.

CNW carries all types of Extraction and Clean Up tubes. Salts, buffers and SPE sorbents are pre-packaged in anhydrous packages, which is to support the most common QuEChERS methodologies used today. CNW Dispersive SPE product line is configured for use with European Method EN 15662 and AOAC 2007.01 Method.



dSPE Extraction Tube

#### Citrate Extraction Tube

Art.	Description	Package
2.CA8010.0001	Magnesium sulfate 4g, NaCl 1g, sodium citrate dibasic sesquihydrate 0.5g, sodium citrate tribasic dihydrate 1g, 15mL	50 pcs
2.CA8011.0001	Magnesium sulfate 4g, NaCl 1g, sodium citrate dibasic sesquihydrate 0.5g, sodium citrate tribasic dihydrate 1g, 50mL	50 pcs
2.CA8012.0001	Magnesium sulfate 6g, NaCl 1.5g, sodium citrate dibasic sesquihydrate 0.75g, sodium citrate tribasic dihydrate 1.5g, 50mL	50 pcs

#### Mg<sub>2</sub>SO<sub>4</sub> Extraction Tube

Art.	Description	Package
2.CA8113.0001	Magnesium sulfate 6g, sodium acetate 1.5g, 15mL	50 pcs
2.CA8114.0001	Magnesium sulfate 6g, sodium acetate 1.5g, 50mL	50 pcs
2.CA8215.0001	Magnesium sulfate 4g, NaCl 0.5g, 50mL	50 pcs
2.CA8216.0001	Magnesium sulfate 4g, NaCl 1g, 50mL	50 pcs
2.CA8217.0001	Magnesium sulfate 6g, NaCl 1.5g, 50mL	50 pcs

#### PSA Clean Up Tube

Art.	Description	Package
2.CA8318.0001	Magnesium sulfate 150mg, PSA 25mg, 2mL	100 pcs
2.CA8319.0001	Magnesium sulfate 150mg, PSA 50mg, 2mL	100 pcs
2.CA8320.0001	Magnesium sulfate 900mg, PSA 150mg, 15mL	50 pcs
2.CA8321.0001	Magnesium sulfate 1.2g, PSA 400mg, 15mL	50 pcs
2.CA8322.0001	Magnesium sulfate 900mg, PSA 150mg, 50mL	50 pcs



dSPE Clean Up Tube

Art.	Description	Package
2.CA8323.0001	Magnesium sulfate 1.2g, PSA 400mg, 50mL	50 pcs

**PSA/C18 Clean Up Tube**

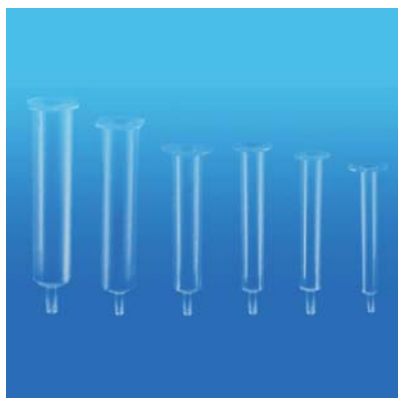
Art.	Description	Package
2.CA8424.0001	Magnesium sulfate 150mg, PSA 25mg, C18 25mg, 2mL	100 pcs
2.CA8425.0001	Magnesium sulfate 150mg, PSA 50mg, C18 50mg, 2mL	100 pcs
2.CA8426.0001	Magnesium sulfate 900mg, PSA 150mg, C18 150mg, 15mL	50 pcs
2.CA8427.0001	Magnesium sulfate 900mg, PSA 300mg, C18 150mg, 15mL	50 pcs
2.CA8428.0001	Magnesium sulfate 1.2g, PSA 400mg, C18 400mg, 15mL	50 pcs
2.CA8429.0001	Magnesium sulfate 900mg, PSA 150mg, C18 150mg, 50mL	50 pcs
2.CA8430.0001	Magnesium sulfate 900mg, PSA 300mg, C18 150mg, 50mL	50 pcs
2.CA8431.0001	Magnesium sulfate 1.2g, PSA 400mg, C18 400mg, 50mL	50 pcs

**PSA/GCB Clean Up Tube**

Art.	Description	Package
2.CA8532.0001	Magnesium sulfate 150mg, PSA 25mg, GCB 2.5mg, 2mL	100 pcs
2.CA8533.0001	Magnesium sulfate 150mg, PSA 25mg, GCB 7.5mg, 2mL	100 pcs
2.CA8534.0001	Magnesium sulfate 150mg, PSA 50mg, GCB 50mg, 2mL	100 pcs
2.CA8535.0001	Magnesium sulfate 900mg, PSA 150mg, GCB 15mg, 15mL	50 pcs
2.CA8536.0001	Magnesium sulfate 900mg, PSA 150mg, GCB 45mg, 15mL	50 pcs
2.CA8537.0001	Magnesium sulfate 900mg, PSA 300mg, GCB 150mg, 15mL	50 pcs
2.CA8538.0001	Magnesium sulfate 1.2g, PSA 400mg, GCB 400mg, 15mL	50 pcs
2.CA8539.0001	Magnesium sulfate 900mg, PSA 150mg, GCB 45mg, 50mL	50 pcs
2.CA8540.0001	Magnesium sulfate 900mg, PSA 300mg, GCB 50mg, 50mL	50 pcs
2.CA8541.0001	Magnesium sulfate 1.2g, PSA 400mg, GCB 400mg, 50mL	50 pcs

**PSA/GCB/C18 Clean Up Tube**

Art.	Description	Package
2.CA8642.0001	Magnesium sulfate 150mg, PSA 50mg, GCB 50mg, C18 50mg, 2mL	100 pcs
2.CA8643.0001	Magnesium sulfate 1.2g, PSA 400mg, GCB 400mg, C18 400mg, 15mL	50 pcs
2.CA8644.0001	Magnesium sulfate 1.2g, PSA 400mg, GCB 400mg, C18 400mg, 50mL	50 pcs



Empty SPE Tubes



SPE Frits



SPE Tube Adapter

## SPE Tube Accessories

### Empty SPE Tubes and Frits

CNW CNWBOND and Poly-Sery SPE tubes are available in sizes from 1 mL to 60 mL made with serological grade polypropylene to be straight-walled syringe barrels. Clean 20 µm polyethylene frits are pre-cut to fit into CNW SPE columns for either filtration or custom packing needs.

To request a large package of tubes and frits, please contact us directly or local representatives.

#### Empty Polypropylene SPE Tube (no frits)

Art.	Description	Package
2.CR0001.0001	volume 1mL	100 pcs
2.CR0003.0001	volume 3mL	100 pcs
2.CR0006.0001	volume 6mL	100 pcs
2.CR0010.0001	volume 10mL	100 pcs
2.CR0035.0001	volume 35mL	100 pcs
2.CR0060.0001	volume 60mL	100 pcs

#### Polyethylene Frits

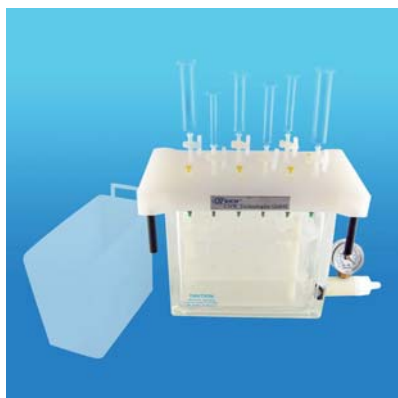
Art.	Description	Package
2.CR01PE.0001	for 1mL tube	100 pcs
2.CR03PE.0001	for 3mL tube	100 pcs
2.CR06PE.0001	For 6mL tube	100 pcs
2.CR10PE.0001	For 10mL tube	100 pcs
2.CR35PE.0001	For 35mL tube	100 pcs
2.CR60PE.0001	For 60mL tube	100 pcs

### SPE Tube Adapter

Tube adapters serve many purposes. They can be used to connect SPE tubes in series to provide different selectivities. A larger empty syringe barrel can be stacked on top of a smaller SPE tube to act as a larger load reservoir. They can also serve as an adapter for positive pressure methods.

#### SPE Tube Adapter

Art.	Description	Package
2.CR0002.0001	For 1, 3 and 6mL tubes	12 pcs
2.CR0011.0001	For 10, 35 and 60mL tubes	6 pcs



12-position Vacuum Manifold



16-position Vacuum Manifold



24-position Vacuum Manifold



10-position Flash Vacuum Manifold

## SPE Vacuum Manifolds & Accessories

### SPE Vacuum Manifold

Vacuum manifolds for SPE sample preparation, filtration, and elution are available in 12-, 16-, and 24-port configurations. These manifolds permit consistent extraction and filtration results. Multiple sample processing with these manifolds simplifies procedures and saves time. The manifolds consist of a clear glass chamber and lid to which a vacuum is applied to draw a sample through an SPE column, cartridge, or disk.

Adjustable racks placed in the glass vacuum chamber will accommodate a variety of sample collection vessels, including test tubes, autosampler vials, volumetric flasks, and Erlenmeyer flasks. Eluants are deposited directly into the collection vessel of choice via polypropylene, optional stainless steel, or Teflon needles. Drying attachments for the 12- and 24-port manifolds will direct a flow of air or nitrogen into the collection vessels to dry eluants prior to further analysis. Drying attachments can also be connected, via adapters, to SPE columns or cartridges in order to dry the column or cartridge prior to final elution. Optional disposable solvent resistant polypropylene containers are available for the twelve port manifolds. These waste containers greatly simplify sample preparation, solvent disposal, and clean-up.

#### 12 Position Vacuum Manifold Set-Complete

Art.	Description	Package
2.CR1012.0001	Includes: <ul style="list-style-type: none"> <li>• 1 glass chamber</li> <li>• 1 cover, gasket, &amp; 12 stopcocks</li> <li>• 1 vacuum gauge &amp; valve assembly</li> <li>• 12 polypropylene needles</li> <li>• Collection rack shelves, legs, clips, &amp; posts</li> <li>• 6 plates</li> <li>• 1 waste container</li> </ul>	1 pcs

#### 16 Position Vacuum Manifold Set-Complete

Art.	Description	Package
2.CR1416.0001	Includes: <ul style="list-style-type: none"> <li>• 1 glass chamber</li> <li>• 1 cover, gasket, &amp; 16 stopcocks</li> <li>• 1 vacuum gauge &amp; valve assembly</li> <li>• 16 polypropylene needles</li> <li>• Collection rack shelves, legs, clips, &amp; posts</li> <li>• 4 plates</li> </ul>	1 pcs

#### 24 Position Vacuum Manifold Set-Complete

Art.	Description	Package
2.CR1824.0001	Includes: <ul style="list-style-type: none"> <li>• 1 glass chamber</li> <li>• 1 cover, gasket, &amp; 24 stopcocks</li> <li>• 1 vacuum gauge &amp; valve assembly</li> <li>• 24 polypropylene needles</li> <li>• Collection rack shelves, legs, clips, &amp; posts</li> <li>• 4 plates</li> </ul>	1 pcs

### 10 Position Flash Vacuum Manifold

For your large column applications from 10 to 70g, these introduced processing stations target the large SPE and Flash columns. Typically vacuum manifolds can handle only 12, 16, or 24 normal size columns, but for those samples that require larger capacity, we have developed a new larger manifold. With 10 positions, the unit is able to address the larger solvent volumes.

**10 Position Flash Vacuum Manifold Set-Complete**

Art.	Description	Package
2.CR2010.0001	Includes: <ul style="list-style-type: none"> <li>• 1 glass chamber</li> <li>• 1 cover, gasket, &amp; 10 stopcocks</li> <li>• 1 vacuum gauge &amp; valve assembly</li> <li>• 10 polypropylene needles</li> <li>• Collection rack shelves, legs, clips, &amp; posts</li> <li>• 4 plates</li> </ul>	1 pcs

**Drying Attachments**

Drying Attachments are available for the 12-, 16-, and 24-port manifolds and 10-port flash manifold, which will direct the flow of air or nitrogen into the collection vessels to concentrate eluants, prior to further analysis. Drying attachments can also be connected directly to columns, cartridges, or disks via adapters to permit drying sorbent beds, prior to final elution.



Drying Attachment

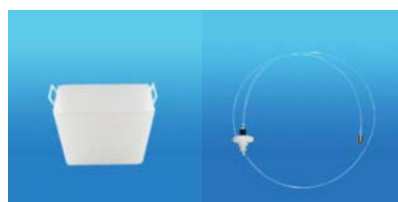
**Drying Attachment**

Art.	Description	Package
2.CR1027.0001	12 Position Drying Attachment	1 pcs
2.CR1431.0001	16 Position Drying Attachment	1 pcs
2.CR1839.0001	24 Position Drying Attachment	1 pcs
2.CR2025.0001	10 Position Drying Attachment for Flash Manifold	1 pcs

**12 Position PP Vacuum Waste Container**

Disposable solvent resistant polypropylene waste container; for 12-port manifold, greatly simplify sample preparation, solvent disposal, and final clean-up of the manifold.

The liner is designed to contain all liquids used in SPE sample preparation. Place the disposable liner into the glass vacuum chamber, and replace the manifold lid. Just prior to final elution, the liner, containing the waste solvents, is removed from the vacuum chamber. Waste solvents should be properly discarded from the container. It can be cleaned and re-used a number of times, prior to discarding.



Waste Container

Large Volume Sampler

**12 Position PP Vacuum Waste Container**

Art.	Description	Package
2.CR1028.0001	Disposable waste container, PP	10 pcs

**Large Volume Sampler**

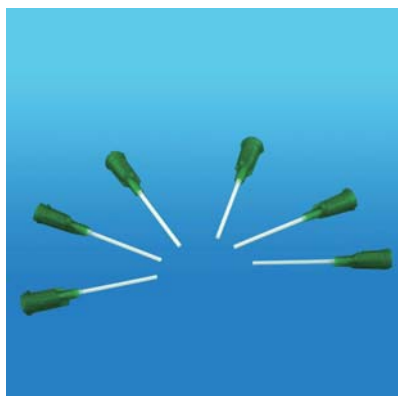
Large volume sampler enables you to transfer low viscosity samples directly from any sample container to conventional SPE tubes on the SPE vacuum manifold. It contains 1/8-inch PTFE tubing with a SPE adapter at one end for connecting SPE tubes and a stainless steel weight at the other end for touching the bottom of sample container. Note that large volume sampler can only be used with polypropylene SPE tubes.



Large Volume Sampler with Vacuum Manifold

**Large Volume Sampler**

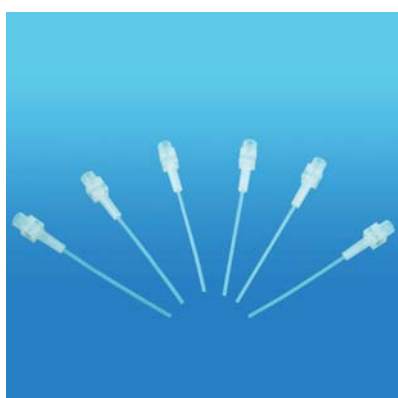
Art.	Description	Package
2.CA3001.0001	For use with 3 or 6mL SPE tubes	1 pcs



Needles-Polypropylene



Needles-Stainless Steel



Needles-Teflon



Glass Chamber with Vacuum Gauge, Valve

Cover, Gasket, Stopcocks

## Optional Needles for Vacuum Manifold

The optional disposable solvent resistant PP needles and stainless steel needles are used for most applications.

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

### Needles - Polypropylene

Art.	Description	Package
2.CR1017.0001	For use with 12-port manifold	12 pcs
2.CR1421.0001	For use with 16-port manifold	16 pcs
2.CR1829.0001	For use with 24-port manifold	24 pcs
2.CR2015.0001	For use with 10-port flash manifold	10 pcs

### Needles - Stainless Steel

Art.	Description	Package
2.CR1018.0001	For use with 12-port manifold	12 pcs
2.CR1422.0001	For use with 16-port manifold	16 pcs
2.CR1830.0001	For use with 24-port manifold	24 pcs
2.CR2016.0001	For use with 10-port flash manifold	10 pcs

### Needles - Teflon

Art.	Description	Package
2.CR1205.0001	For use with SPE Vacuum Manifolds	50 pcs
2.CR1210.0001	For use with SPE Vacuum Manifolds	100 pcs

## Other Vacuum Manifold Components

### Glass Chamber

Art.	Description	Package
2.CR1013.0001	Glass chamber, for use with 12-port manifold	1 pcs
2.CR1417.0001	Glass chamber, for use with 16-port manifold	1 pcs
2.CR1825.0001	Glass chamber, for use with 24-port manifold	1 pcs
2.CR2011.0001	Glass chamber, for use with 10-port flash manifold	1 pcs

### Glass Chamber with Vacuum Gauge, Valve

Art.	Description	Package
2.CR1016.0001	Glass Chamber with Vacuum Gauge, Valve, for use with 12-port manifold	1 pcs
2.CR1420.0001	Glass Chamber with Vacuum Gauge, Valve, for use with 16-port manifold	1 pcs
2.CR1828.0001	Glass Chamber with Vacuum Gauge, Valve, for use with 24-port manifold	1 pcs
2.CR2014.0001	Glass Chamber with Vacuum Gauge, Valve, for use with 10-port flash manifold	1 pcs

### Cover, Gasket, Stopcocks Assembly

Art.	Description	Package
2.CR1014.0001	Assembly, for use with 12-port manifold, included 12 stopcocks	1 pcs
2.CR1418.0001	Assembly, for use with 16-port manifold, included 16 stopcocks	1 pcs
2.CR1826.0001	Assembly, for use with 24-port manifold, included 24 stopcocks	1 pcs
2.CR2012.0001	Assembly, for use with 10-port flash manifold, included 10 stopcocks	1 pcs



Gaskets Stopcocks



Collection Rack Shelves, Legs, Clips, Posts



Female & Male Luer Fittings Legs for Cover



Plugs Support Posts



Clips Base Plate with Posts

**Gaskets**

Art.	Description	Package
2.CR1015.0001	Gaskets, for use with 12-port manifold	2 pcs
2.CR1419.0001	Gaskets, for use with 16-port manifold	2 pcs
2.CR1827.0001	Gaskets, for use with 24-port manifold	2 pcs
2.CR2013.0001	Gaskets, for use with 10-port flash manifold	2 pcs

**Stopcocks**

Art.	Description	Package
2.CR1026.0001	For use with 12-port manifold	12 pcs
2.CR1430.0001	For use with 16-port manifold	16 pcs
2.CR1838.0001	For use with 24-port manifold	24 pcs
2.CR2024.0001	For use with 10-port flash manifold	10 pcs

**Collection Rack Shelves, Legs, Clips, & Posts**

Art.	Description	Package
2.CR1019.0001	Collection Rack Shelves, Legs, Clips, & Posts, for use with 12-port manifold	1 pcs
2.CR1423.0001	Collection Rack Shelves, Legs, Clips, & Posts, for use with 16-port manifold	1 pcs
2.CR1831.0001	Collection Rack Shelves, Legs, Clips, & Posts, for use with 24-port manifold	1 pcs
2.CR2017.0001	Collection Rack Shelves, Legs, Clips, & Posts, for use with 10-port flash manifold	1 pcs

**Female Luer Fittings, & Male Luer Fittings**

Art.	Description	Package
2.CR1102.0001	Female Luer Fittings, for use with 12-, 16-, and 24-port manifolds and 10-port flash manifold	2 pcs
2.CR1103.0001	Male Luer Fittings, for use with 12-, 16-, and 24-port manifolds and 10-port flash manifold	2 pcs

**Legs for Cover - Black**

Art.	Description	Package
2.CR1105.0001	Black legs, for use with 12-, 16-, and 24-port manifolds and 10-port flash manifold	4 pcs

**Vacuum Manifold Plugs**

Art.	Description	Package
2.CR1110.0001	plugs, for use with 12-, 16-, and 24-port manifolds and 10-port flash manifold	2 pcs

**Support Posts for Rack**

Art.	Description	Package
2.CR1104.0001	Support posts, included with 12-, 16-, and 24-port manifolds	3 pcs
2.CR2026.0001	Support posts, included with 10-port flash manifold	3 pcs

**Retaining Clips**

Art.	Description	Package
2.CR1109.0001	Retaining clips, included with 12-, 16-, and 24-port manifolds and 10-port flash manifold	12 pcs

**Plate - Base**

The base plate is used for fixing the collection rack shelves.

Art.	Description	Package
2.CR1025.0001	For use with 12-port manifold	1 pcs
2.CR1429.0001	For use with 16-port manifold	1 pcs
2.CR1837.0001	For use with 24-port manifold	1 pcs
2.CR2023.0001	For use with 10-port flash manifold	1 pcs





Plate-Dimple



Plate-13mm

Plate-16mm

Plate-Autosampler  
VialPlate-Volumetric  
Flask

Plate-19mm,25mm

### Plate -Dimple

The dimple plate is used when utilizing test tubes as collection vessels.

Art.	Description	Package
2.CR1024.0001	For use with 12-port manifold	1 pcs
2.CR1428.0001	For use with 16-port manifold	1 pcs
2.CR1836.0001	For use with 24-port manifold	1 pcs
2.CR2022.0001	For use with 10-port flash manifold	1 pcs

### Plate - 13mm

It is used for keeping 13mm test tubes.

Art.	Description	Package
2.CR1020.0001	13mm plate, for use with 12-port manifold	1 pcs
2.CR1424.0001	13mm plate, for use with 16-port manifold	1 pcs
2.CR1832.0001	13mm plate, for use with 24-port manifold	1 pcs

### Plate - 16mm

It is used for keeping 16mm test tubes.

Art.	Description	Package
2.CR1022.0001	16mm plate, for use with 12-port manifold	1 pcs
2.CR1426.0001	16mm plate, for use with 16-port manifold	1 pcs
2.CR1834.0001	16mm plate, for use with 24-port manifold	1 pcs

### Plate -Autosampler Vial

Art.	Description	Package
2.CR1023.0001	Autosampler Vial plate, included with 12-port manifold only	1 pcs

### Plate - Volumetric Flask

Art.	Description	Package
2.CR1021.0001	Volumetric Flask plate, included with 12-port manifold only	1 pcs

### Plate - 19mm

It is used for keeping 19mm test tubes.

Art.	Description	Package
2.CR2018.0001	19mm plate, included with 10-port flash manifold only	1 pcs

### Plate - 25mm

It is used for keeping 25mm test tubes.

Art.	Description	Package
2.CR2020.0001	25mm plate, included with 10-port flash manifold only	1 pcs

### Glass Test Tubes

It is used for collecting eluates.

Art.	Description	Package
2.CR9005.0001	Test tubes, without rim, 5mL, 12 mm × 75 mm.	12 pcs
2.CR9012.0001	Test tubes, without rim, 12mL, 16 mm × 100 mm.	12 pcs



Single Station SPE Disk Manifold, 47mm



3-Station SPE Disk Manifold, 47mm

## SPE Disk Manifolds & Accessories

Use the manifolds with 47mm and 90mm SPE disks. The unique design of the manifolds are unlimited expandability, compact, efficient size, user friendly design, accepts many standard collection vessels, designed for all SPE sample prep methods, and satisfaction Guaranteed!

Whether you are performing Oil and Grease Method 1664, Method 525.1, 525.2, 550.1, 608, or 549.1, our Manifold has been designed to facilitate your analysis. For easy loading and leak-proof sealing of the SPE disk, the manifold utilizes a unique threaded Screw cap to hold the glass sample reservoir in place over the disk. This novel design allows for simple replacement of the SPE disk with minimal disassembly of the manifold.

### Single Station SPE Disk Manifold, 47mm

Art.	Description	Package
2.CP0383.0001	A complete 47mm single station comes with mounting hardware, Glass Sample Reservoir, Disk Support Screen and 25×200mm Sample Collection Vessel.	1 pcs

### 2 - Station SPE Disk Manifold, 47mm

Art.	Description	Package
2.CP0200.0001	A complete 47mm 2-station comes with mounting hardware, Glass Sample Reservoir, Disk Support Screen and 25×200mm Sample Collection Vessel.	1 pcs

### 3 - Station SPE Disk Manifold, 47mm

Art.	Description	Package
2.CP0100.0001	A complete 47mm 3-station comes with mounting hardware, Glass Sample Reservoir, Disk Holder and 25×200mm Sample Collection Vessel.	1 pcs

### 6 - Station SPE Disk Manifold, 47mm

Art.	Description	Package
2.CP0080.0001	A complete 47mm 6-station comes with mounting hardware, Glass Sample Reservoir, Disk Holder and 25×200mm Sample Collection Vessel.	1 pcs

### Single Station SPE Disk Manifold, 90mm

Art.	Description	Package
2.CP0389.0001	A complete 90mm single station comes with mounting hardware, Glass Sample Reservoir, Disk Holder and 25×200mm Sample Collection Vessel.	1 pcs

### 6 - Station SPE Disk Manifold, 90mm

Art.	Description	Package
2.CP0090.0001	A complete 90mm 6-station comes with mounting hardware, Glass Sample Reservoir, Disk Support Screen and 25×200mm Sample Collection Vessel.	1 pcs

### Racks for Disk Manifolds

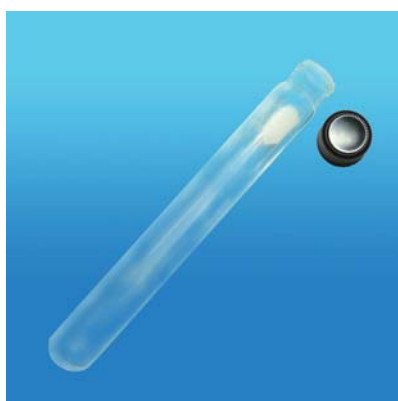
Art.	Description	Package
2.CP0351.0001	Rack for 3-station	1 pcs
2.CP0352.0001	Rack for 6-station	1 pcs

### Sample Reservoir

Art.	Description	Package
2.CP0432.0001	1000mL, for use with 47mm Manifold	1 pcs
2.CP0433.0001	1000mL, for use with 90mm Manifold	1 pcs



Disk Holder



Sample Collection Vessel

### Disk Holder

The disk holder includes 316 SS disk support screen, a threaded screw cap to provide attachment of sample reservoir and a PTFE valve to control solvent fluid.

Art.	Description	Package
2.CP0236.0001	Disk holder, for use with 47mm Manifold	1 pcs
2.CP0336.0001	Disk holder, for use with 90mm Manifold	1 pcs

### Sample Collection Vessel

Art.	Description	Package
2.CP0502.0001	Sample Collection Vessel, for use with 47mm and 90mm Manifolds, 25×200mm, round bottom	1 pcs
2.CP0501.0001	Sample Collection Vessel, for use with 47mm and 90mm Manifolds, 28×95mm, flat bottom	1 pcs
2.CP0503.0001	Disk SPE Concentration Tube, for use with 47mm and 90mm Manifolds, 15mL,	1 pcs

### Empore™ Extraction Disks

Art.	Description	Package
2.CP2173.0001	Empore™ C18 47 mm Extraction Disk	20 pcs
2.CP2231.0001	Empore™ SDB-XC 47 mm Extraction Disk	20 pcs
2.CP2264.0001	Empore™ SDB-RPS 47 mm Extraction Disk	20 pcs
2.CP2181.0001	Empore™ C18 90 mm Extraction Disk	10 pcs

## HPLC Syringe Filters and Gloves

### HPLC Syringe Filters

#### Introduction

CNW PRECLEAN™ syringe filters are available with two different membrane types in two pore sizes. The ultrasonic-welded Polypropylene housing of the syringe filters ensures high pressure resistance. The membrane is fixed in the housing in such a way that a bypassing of the sample liquid is impossible. The colour-coding enables easy identification of the filter's membrane type.

Due to their Luer-Lock-Inlet (female) an easy and safe installation of the filter on the syringe is guaranteed. The outlet is designed as Luer-Slip (male). All PRECLEAN™ syringe filters are HPLC certified, thorough quality controls before and after the manufacturing process guarantee a constantly high quality of the membrane material as well as of the complete filter unit.

#### Polyethersulfone (PES)

- Hydrophilic, very low protein binding
- Fast filtration with superior flow rates and high throughputs
- Mechanically strong, may be used with alcohols and resistive proteins
- Also with higher temperatures
- Reduce filtration time; optimized for biological, pharmaceutical filtration requirements

#### Nylon (PA)

- Hydrophilic, for aqueous and aqueous/organic solvents with pH range 3-10
- High sensitivity and low background for enhanced detection and resolution
- The industry standard for pharmaceutical filtration, provides broad solvent and chemical compatibility and low extractables

#### PRECLEAN™ 13 mm Syringe Filter

Art.	Description	Package
2.CF1101.0001	PES membrane, 0.45 µm, blue	100 pcs
2.CF1102.0001	PES membrane, 0.2 µm, yellow	100 pcs
2.CF2101.0001	Nylon (PA) membrane, 0.45 µm, white	100 pcs
2.CF2102.0001	Nylon (PA) membrane, 0.2 µm, green	100 pcs

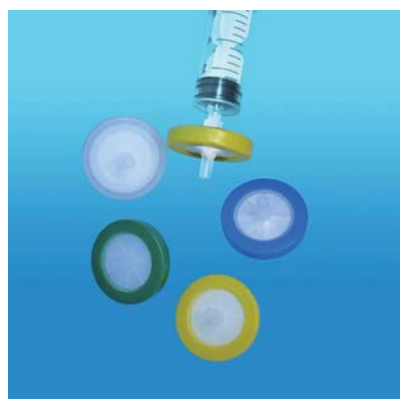
#### PRECLEAN™ 25 mm Syringe Filter

Art.	Description	Package
2.CF1201.0001	PES membrane, 0.45 µm, blue	100 pcs
2.CF1202.0001	PES membrane, 0.2 µm, yellow	100 pcs
2.CF2201.0001	Nylon (PA) membrane, 0.45 µm, white	100 pcs
2.CF2202.0001	Nylon (PA) membrane, 0.2 µm, green	100 pcs

#### List of Solvent Resistance

Solvent	PES	PA
Acetic Acid, 5%	+	+
Acetone	-	+
Acetonitrile	+	+
Ammonia, 6N	+	+
Benzene	+	*
Carbon Tetrachloride	+	*
Chloroform	-	-
Citric Acid	+	*
Cyclohexane	+	+

Solvent	PES	PA
Ethylene Glycol	+	+
Formic Acid	+	-
Hydrochloric Acid, Conc	+	-
Hexane	+	+
Methanol	+	+
Methylene Chloride	-	-
Nitric Acid, Conc	-	-
Nitrobenzene	-	*
Phenol, 0.5%	-	+



Syringe Filters

# HPLC Syringe Filters and Gloves

Solvent	PES	PA
Dimethyl Formamide	-	+
1,4-Dioxane	*	+
DMSO	-	+
Ethanol	+	+
Ethers	+	+
Ethyl Acetate	-	+

Solvent	PES	PA
Sodium Hydroxide, 6N	+	-
Sulfuric Acid, Conc	-	-
Tetrahydrofuran	-	+
Toluene	-	*
Water	+	+
Xylene	*	*

+ resistant  
 - non resistant  
 \* semi resistant

## Disposable Gloves

### Disposable Powder-free Nitrile Gloves



Disposable Powder-free Nitrile Gloves

- CE Category III, protected from complex risks
- Resistant to several kinds of chemicals
- 100% Latex-free, will not cause allergic reaction
- Powder-free, have been specially treated for easy on - easy off
- Smooth, flexible, and comfortable
- Durable, not punctured or tore easily
- Can be used in both hands
- Thickness: 0.08mm

Art.	Description	Package
6.091102.100B	Size: S, Width: 85±5mm, Color: Bule	100 pcs
6.091103.100B	Size: M, Width: 95±5mm, Color: Bule	100 pcs
6.091104.100B	Size: L, Width: 105±5mm, Color: Bule	100 pcs

### Disposable Powder-free Latex Gloves



Disposable Powder-free Latex Gloves

- CE Category III, protected from complex risks
- Resistant to several kinds of chemicals
- Powder-free, have been specially treated for easy on - easy off
- Smooth, flexible, and comfortable
- Durable, not punctured or tore easily
- Can be used in both hands
- Thickness: 0.1mm

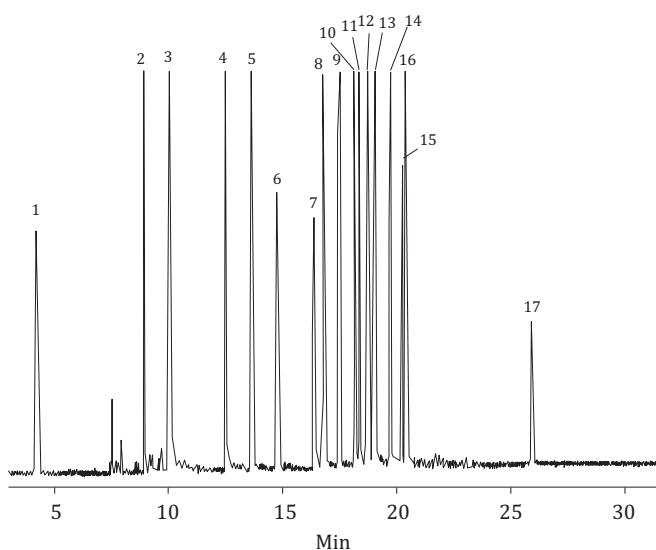
Art.	Description	Package
6.091202.100W	Size: S, Width: 85±5mm, Color: Bule	100 pcs
6.091203.100W	Size: M, Width: 95±5mm, Color: Bule	100 pcs
6.091204.100W	Size: L, Width: 105±5mm, Color: Bule	100 pcs

# Sample Prep Applications

## Solid Phase Extraction

### Organophosphorus pesticides in fruits and vegetables

1. Dipterex
2. Dichlorvos
3. Methamidophos
4. Acephate
5. Phorate
6. Omethoate
7. Monocrotophos
8. Dimethoate
9. Methyl Parathion
10. Chlorpyrifos
11. Pirimiphos-methyl
12. Malathion
13. Fenitrothion
14. Parathion
15. Isocarbophos
16. Quinalphos
17. Triazophos



#### Sample Pretreatment:

Homogenize 10 g chopped fruit or vegetable sample spiked with pesticides in 20 mL Acetonitrile. Add 2 g NaCl and homogenize 5 min, centrifuge and transfer Acetonitrile layer to clean centrifuge tube. Add proper anhydrous sodium sulfate and centrifuge for 5 min. Evaporate supernatant to 1 mL under N<sub>2</sub> at 35 °C.

**Condition** SPE tube with 5 mL acetonitrile:toluene (3:1)

**Load** 1 mL sample onto SPE tube

**Elute** with 20 mL acetonitrile:toluene (3:1)

**Concentrate** to dryness with N<sub>2</sub> at 40 °C

**Reconstitute** in 1 mL acetone:n-hexane (1:1)

#### SPE/GC

**SPE tube:** CNWBOND GCB/PSA, 500 mg/500 mg/6 mL (2.CA5169.0001) or CNWBOND GCB/NH<sub>2</sub>, 500 mg/500 mg/6 mL (2.CA5069.0001)

**Column:** CD-5, 30 m × 0.25 mm I.D., 0.25 μm film (1.521511.0001)

**Temp.:** 50 °C (1 min) to 200 °C at 15 °C/min, hold 2 min, then to 260 °C at 5 °C/min, hold 8 min.

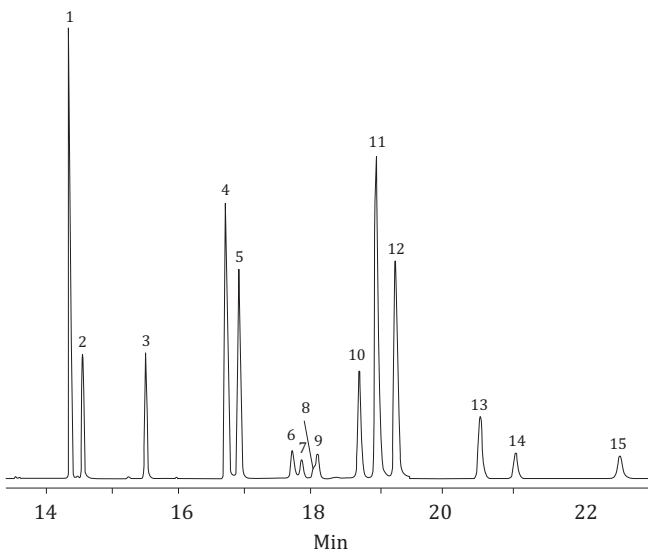
**Det.** FPD, 250 °C

**Carrier gas:** Nitrogen

**Injection:** 1 μL 250°C, splitless

### Pyrethroid pesticides in spinach

1. Bifenthrin
2. Fenpropathrin
3. Cyhalothrin
4. cis-Permethrin
5. trans-Permethrin
6. Cyfluthrin-1
7. Cyfluthrin-2
8. Cyfluthrin-3
9. Cyfluthrin-4
10. Cypermethrin
11. Ethofenprox
12. Silafluofen
13. Fenvalerate
14. Esfenvalerate
15. Deltamethrin



#### Sample Pretreatment:

Homogenize 10 g fresh spinach spiked with pesticides in 20 mL acetone:n-hexane (1:1). Add 2 g NaCl and homogenize 5 min, centrifuge and transfer supernatant to clean centrifuge tube. Add proper anhydrous sodium sulfate and centrifuge for 5 min. Evaporate supernatant to 2 mL under N<sub>2</sub> at 35 °C.

**Condition** by stacking CNWBOND Carbon-GCB SPE tube on top of CNWBOND Florisil SPE tube using an SPE tube adapter. Pass 5 mL acetone:n-hexane (1:1) through both SPE tubes

**Load** 2 mL sample onto SPE tubes

**Elute** with 12 mL ether:acetone:n-hexane (2:2:1) through lower Florisil SPE tube

**Concentrate** to dryness with N<sub>2</sub> at 40 °C

**Reconstitute** in 1 mL acetone:n-hexane (1:1)

#### SPE/GC

**SPE tube:** CNWBOND Carbon-GCB, 250 mg/3 mL (2.CA1663.0001) or 500 mg/6 mL (2.CA1654.0001); CNWBOND Florisil, 500 mg/3 mL (2.CA1553.0001) or 1 g/6 mL (2.CA1555.0001)

**Column:** CD-5MS, 30 m × 0.25 mm I.D., 0.25 μm film (1.554421.0001)

**Temp.:** 40 °C (2 min) to 300 °C at 8 °C/min, hold 5 min

**Det.** MSD, 200 °C, scan range m/z 85-500

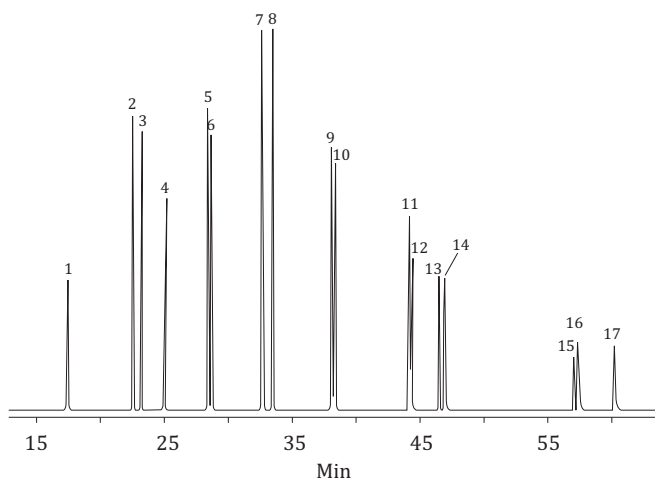
**Carrier gas:** Helium, 1.0 mL/min

**Injection:** 1 μL 300°C, splitless (4.5 min delay)

# Sample Prep Applications

## PAHs in soil

- |                       |                            |
|-----------------------|----------------------------|
| 1. Naphthalene        | 10. Chrysene               |
| 2. Acenaphthylene     | 11. Benzo[b]fluoranthene   |
| 3. Acenaphthene       | 12. Benzo[k]fluoranthene   |
| 4. Fluorene           | 13. Benzo[a]pyrene         |
| 5. Phenanthrene       | 14. Perylene-d12           |
| 6. Anthracene         | 15. Indeno[1,2,3-cd]pyrene |
| 7. Fluoranthene       | 16. Dibenzo[a,h]anthracene |
| 8. Pyrene             | 17. Benzo[g,h,i]perylene   |
| 9. Benzo[a]anthracene |                            |



### Sample Pretreatment:

Dry 10 g soil spiked with PAHs with sodium sulphate and reflux 4 hours with 100 mL methylene chloride: n-hexane (1:1) in a Soxhlet extractor. Evaporate the extracts to 1 mL under N<sub>2</sub> at 25 °C, then dilute to 3 mL with n-hexane.

**Condition** SPE tube with 5 mL n-hexane

**Load** 3 mL sample onto SPE tube

**Wash** with 2 mL n-hexane

**Elute** with 5 mL methylene chloride: n-hexane (2:3)

**Concentrate** to 0.5 mL with N<sub>2</sub> at 25 °C, add 0.5 mL internal standard (Perylene-d12).

### SPE/GC

**SPE tube:** CNWBOND PSA, 1 g/6 mL (2.CA2455.0001) or 500 mg/6 mL (2.CA2454.0001)

**Column:** CD-5MS, 60 m × 0.25 mm I.D., 0.25 µm film (1.554424.0001)

**Temp.:** 100 °C (1 min) to 300 °C at 6 °C/min, hold 30 min

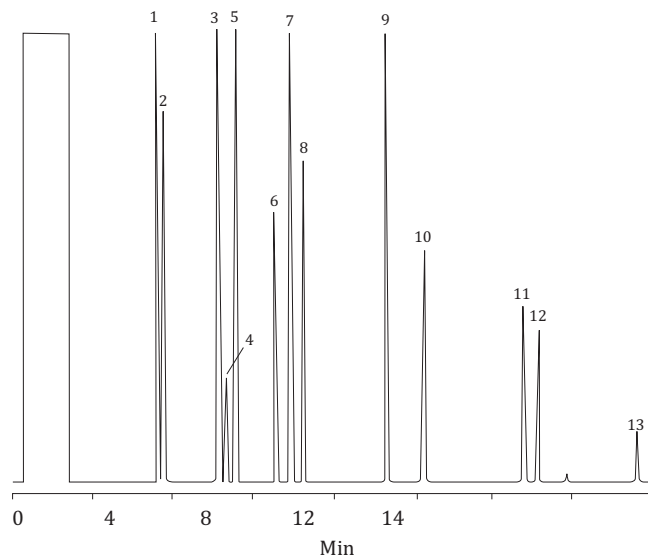
**Det.** MSD, 280 °C, scan range m/z 50-450

**Carrier gas:** Helium, 1.0 mL/min

**Injection:** 1 µL 280 °C, splitless (10 min delay)

## Phenols in Water

- |                       |                               |
|-----------------------|-------------------------------|
| 1. Phenol             | 8. 2,4-Dichlorophenol         |
| 2. 2-Chlorophenol     | 9. 4-Chloro-3-methylphenol    |
| 3. 2-Methylphenol     | 10. 2,4,6-Trichlorophenol     |
| 4. o-Bromophenol      | 11. 4-Nitrophenol             |
| 5. 3-Methylphenol     | 12. 2,3,4,6-Tetrachlorophenol |
| 6. Nitrophenol        | 13. Pentachlorophenol         |
| 7. 2,4-Dimethylphenol |                               |



### Sample Pretreatment:

100mL water spiked with phenols, if sample containing fine sediment may require prefiltration.

**Condition** SPE tube with 6 mL methyl t-butyl ether, 6 mL methanol, 6 mL deionized water

**Load** 100 mL aqueous sample onto SPE tube

**Elute** with 5mL methyl t-butyl ether and allow elution to proceed at a dropwise rate.

### SPE/GC

**SPE tube:** Poly-Sery PSD, 250 mg/6 mL (2.CA3564.0001) or 500 mg/6 mL (2.CA3554.0001)

**Column:** CD-5, 15 m × 0.53 mm I.D., 0.5 µm film (1.521528.0001)

**Temp.:** 65 °C to 185 °C at 10 °C/min, hold 1 min, then to 275 °C at 20 °C/min, hold 5 min.

**Det.** FID, 330 °C

**Carrier gas:** Nitrogen, 1.0 mL/min

**Injection:** 1 µL 200 °C, splitless (45 sec delay)