

VertiSep™ HCS

VertiSep™ HCS HPLC Columns

- High purity spherical silica offers high stability, efficiency and column-to-column reproducibility
- Highest carbon loading C18 offers highest degree of hydrophobicity for highest resolution of organic compounds that have similar structures
- High surface area offers high resolution for gradient elution
- Fully endcapped to improve peak symmetry
- Polymeric bonding offers high stability and longer column lifetime



VertiSep™ HCS packings are high purity silica which contains less amounts of metal ions and sulfate contaminants offer high stability at pH 1.5-10.0 efficiency, column-to-column reproducibility and long lifetime.

VertiSep™ HCS reverse phase C18 packings are highest carbon loading of 23% offering the highest degree of hydrophobicity for highest resolution of organic compounds that have similar structures such as Polynuclear Aromatic Hydrocarbons, Benzidines, Vitamins D2,D3, PTH and Amino acids.

VertiSep™ HCS packings are high surface of 350 m²/g offer high capacity and high resolution for gradient elution.

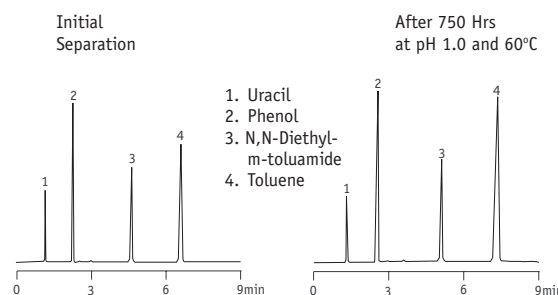
VertiSep™ HCS reverse phase packings are fully endcapped and show selectivity as conventional C18 phases.

VertiSep™ HCS packings are polymeric bonding resulting high stability and longer column lifetime.

VertiSep™ HCS are manufactured by statistic process control of silica synthesis, bonding and column packing. The reproducible column packing method control provides exceptional efficiency, symmetry and reproducible capacity factor.

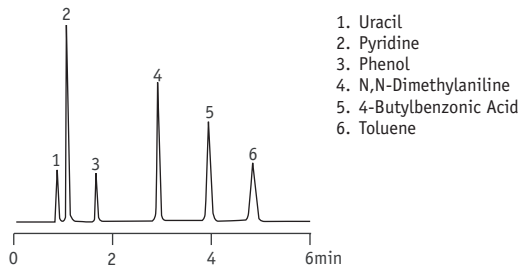
Specifications						
Packing	Particle Size (mm)	Carbon Load (%)	Pore Size (Å)	Pore Volume (mL/g)	Surface Area (m ² /g)	End Capped
C18	3,5,10	23	120	1.0	350	Yes
C8	3,5,10	16	120	1.0	350	Yes
Ph	3,5,10	10	120	1.0	350	Yes
C4	3,5,10	8	120	1.0	350	Yes
CN	3,5,10	5	120	1.0	350	Yes

Stability Test



Column: VertiSep™ HCS C18 5μ 4.6x150mm
Mobile Phase: CH₃OH:Water (58:42)
Flow Rate: 1.0mL/min
Detection: UV230nm

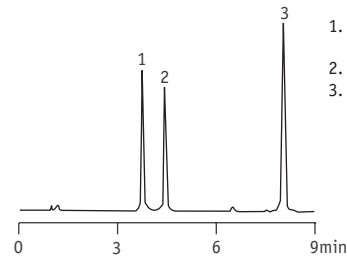
Acids, Bases and Neutrals



1. Uracil
2. Pyridine
3. Phenol
4. N,N-Dimethylaniline
5. 4-Butylbenzoic Acid
6. Toluene

Column: VertiSep™ HCS C18 3µm 100x4.6mm
 Mobile Phase: 50mM KH₂PO₄, pH 3.0:CH₃CN (40:60)
 Flow Rate: 1.0mL/min
 Detection: UV254nm

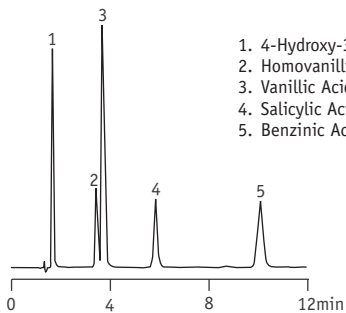
Antibacterials



1. Oxytetracycline Dihydrate
2. Tetracycline HCL
3. Mecloctyline Sulfosalicylate Salt

Column: VertiSep™ HCS C18 5µm 150x4.6mm
 Mobile Phase: A: 50mM KH₂PO₄, pH 3.0
 B: CH₃CN
 Gradient: Time:%B: 0:15, 10:40
 Flow Rate: 2.0mL/min
 Detection: UV254nm

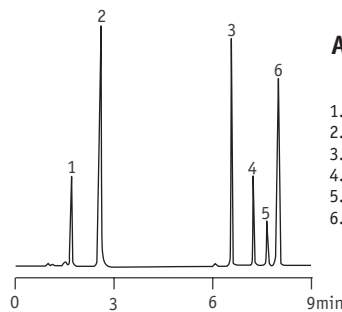
Aromatic Acids



1. 4-Hydroxy-3-methoxy-mandelic Acid
2. Homovanillic Acid
3. Vanillic Acid
4. Salicylic Acid
5. Benzoic Acid

Column: VertiSep™ HCS C18 5µm 150x4.6mm
 Mobile Phase: 50mM KH₂PO₄, pH 3.0:CH₃OH (60:40)
 Flow Rate: 1.0mL/min
 Detection: UV254nm

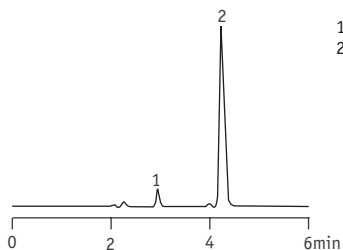
Analgesics



1. Aspirin
2. Acetaminophen
3. Naproxen
4. Fenpropfen
5. Ibuprofen
6. Diclofenac

Column: VertiSep™ HCS C18 5µm 150x4.6mm
 Mobile Phase: A: 50mM KH₂PO₄, pH 3.3
 B: Methanol
 C: Acetonitrile
 Gradient: Time:%B:%C: 0:10:10, 5:30:25
 Flow Rate: 2.0mL/min
 Detection: UV280nm

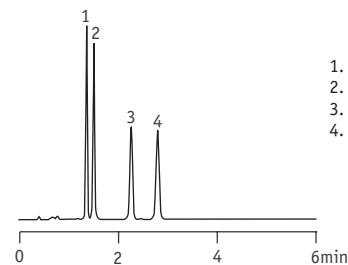
Aspartame



1. Degradant
2. Aspartame

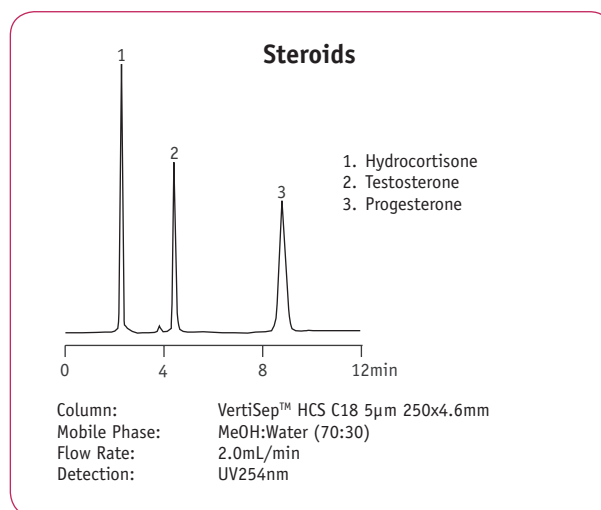
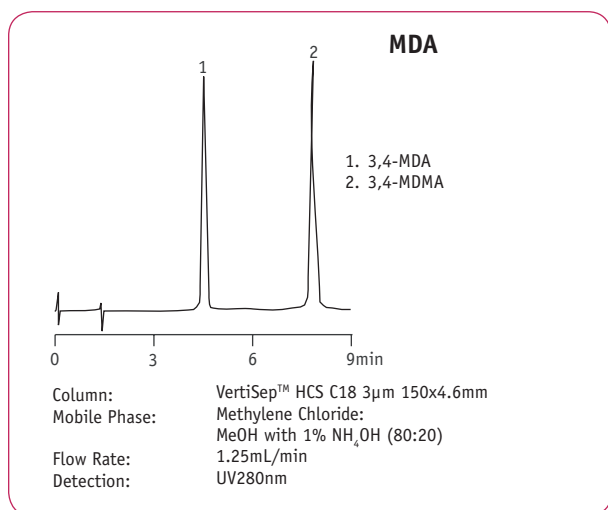
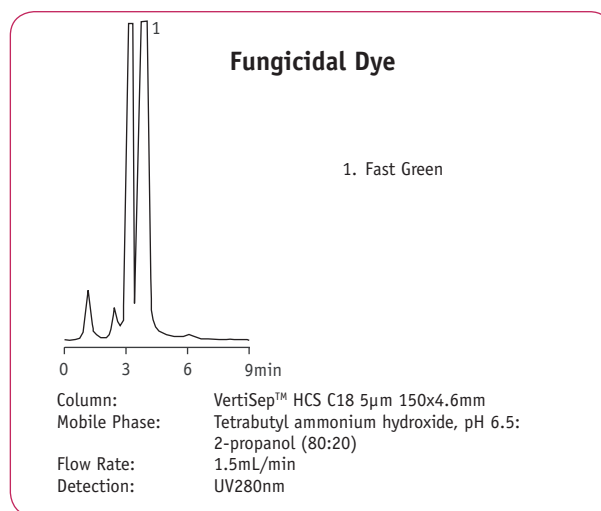
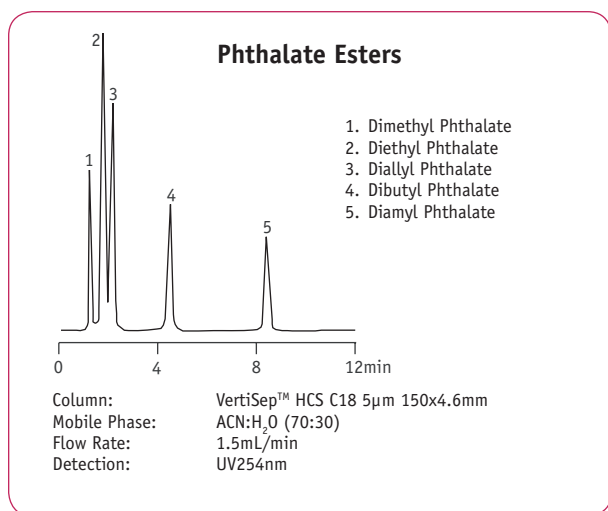
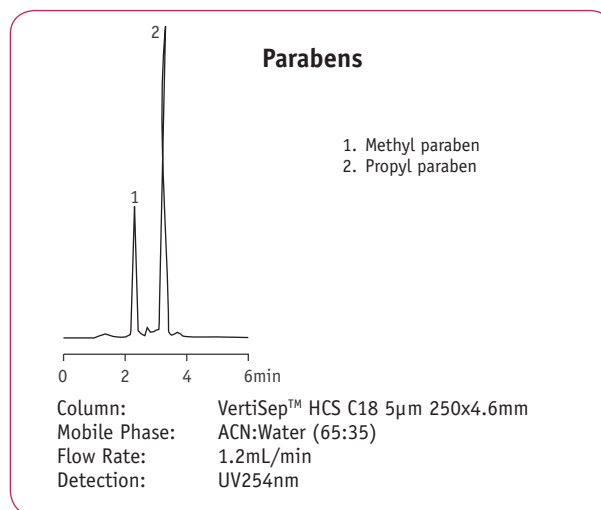
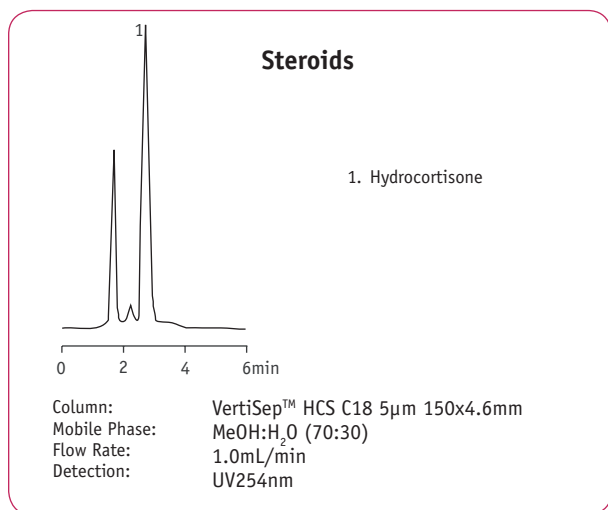
Column: VertiSep™ HCS C18 3µm 150x4.6mm
 Mobile Phase: 50mM KH₂PO₄, pH 3.0:CH₃OH (80:20)
 Flow Rate: 1.0mL/min
 Detection: UV220nm

MDA & MDMA Analogs



1. 2,3-MDA
2. 3,4-MDA
3. 2,3-MDMA
4. 3,4-MDMA

Column: VertiSep™ HCS C18 3µm 150x4.6mm
 Mobile Phase: 50mM KH₂PO₄, pH 3.0:CH₃OH (80:20)
 Flow Rate: 1.0mL/min
 Detection: UV280nm



Ordering Information					
Phase	Particle Size (µm)	Formats	I.D. Length (mm)	QTY	Part No.
VertiSep™ HCS					
C18	3	Ultra-Fast	2.1 x 10	1	03BA-B111
	3	Ultra-Fast	2.1 x 20	1	03BA-B611
	3	Ultra-Fast	2.1 x 50	1	03BA-B211
	3	LC/MS	2.1 x 100	1	03BA-B311
	3	LC/MS	2.1 x 150	1	03BA-B411
	3	LC/MS	3.2 x 100	1	03BA-C311
	3	LC/MS	3.2 x 150	1	03BA-C411
	3	Analytical	4.6 x 100	1	03BA-E311
	3	Analytical	4.6 x 150	1	03BA-E411
	5	LC/MS	2.1 x 100	1	03BA-B321
	5	LC/MS	2.1 x 150	1	03BA-B421
	5	LC/MS	2.1 x 250	1	03BA-B521
	5	LC/MS	3.2 x 100	1	03BA-C321
	5	LC/MS	3.2 x 150	1	03BA-C421
	5	LC/MS	3.2 x 250	1	03BA-C521
	5	Analytical	4.6 x 100	1	03BA-E321
	5	Analytical	4.6 x 150	1	03BA-E421
	5	Analytical	4.6 x 250	1	03BA-E521
	5	Prep	10.0 x 150	1	03BA-H421
	5	Prep	10.0 x 250	1	03BA-H521
	5	Prep	21.2 x 150	1	03BA-I421
	5	Prep	21.2 x 250	1	03BA-I521
	10	Analytical	4.6 x 250	1	03BA-E531
	10	Prep	10.0 x 150	1	03BA-H431
	10	Prep	10.0 x 250	1	03BA-H531
	10	Prep	21.2 x 150	1	03BA-I431
	10	Prep	21.2 x 250	1	03BA-I531

Ordering Information					
Phase	Particle Size (µm)	Formats	I.D. Length (mm)	QTY	Part No.
VertiSep™ HCS					
C8	3	Ultra-Fast	2.1 x 10	1	03BB-B111
	3	Ultra-Fast	2.1 x 20	1	03BB-B611
	3	Ultra-Fast	2.1 x 50	1	03BB-B211
	3	LC/MS	2.1 x 100	1	03BB-B311
	3	LC/MS	2.1 x 150	1	03BB-B411
	3	LC/MS	3.2 x 100	1	03BB-C311
	3	LC/MS	3.2 x 150	1	03BB-C411
	3	Analytical	4.6 x 100	1	03BB-E311
	3	Analytical	4.6 x 150	1	03BB-E411
	5	LC/MS	2.1 x 100	1	03BB-B321
	5	LC/MS	2.1 x 150	1	03BB-B421
	5	LC/MS	2.1 x 250	1	03BB-B521
	5	LC/MS	3.2 x 100	1	03BB-C321
	5	LC/MS	3.2 x 150	1	03BB-C421
	5	LC/MS	3.2 x 250	1	03BB-C521
	5	Analytical	4.6 x 100	1	03BB-E321
	5	Analytical	4.6 x 150	1	03BB-E421
	5	Analytical	4.6 x 250	1	03BB-E521
	5	Prep	10.0 x 150	1	03BB-H421
	5	Prep	10.0 x 250	1	03BB-H521
	5	Prep	21.2 x 150	1	03BB-I421
	5	Prep	21.2 x 250	1	03BB-I521
	10	Analytical	4.6 x 250	1	03BB-E531
	10	Prep	10.0 x 150	1	03BB-H431
	10	Prep	10.0 x 250	1	03BB-H531
	10	Prep	21.2 x 150	1	03BB-I431
	10	Prep	21.2 x 250	1	03BB-I531



VertiSep™ HCS

Ordering Information					
Phase	Particle Size (µm)	Formats	I.D. Length (mm)	QTY	Part No.
VertiSep™ HCS					
Ph	3	Ultra-Fast	2.1 x 10	1	03BD-B111
	3	Ultra-Fast	2.1 x 20	1	03BD-B611
	3	Ultra-Fast	2.1 x 50	1	03BD-B211
	3	LC/MS	2.1 x 100	1	03BD-B311
	3	LC/MS	2.1 x 150	1	03BD-B411
	3	LC/MS	3.2 x 100	1	03BD-C311
	3	LC/MS	3.2 x 150	1	03BD-C411
	3	Analytical	4.6 x 100	1	03BD-E311
	3	Analytical	4.6 x 150	1	03BD-E411
	5	LC/MS	2.1 x 100	1	03BD-B321
	5	LC/MS	2.1 x 150	1	03BD-B421
	5	LC/MS	2.1 x 250	1	03BD-B521
	5	LC/MS	3.2 x 100	1	03BD-C321
	5	LC/MS	3.2 x 150	1	03BD-C421
	5	LC/MS	3.2 x 250	1	03BD-C521
	5	Analytical	4.6 x 100	1	03BD-E321
	5	Analytical	4.6 x 150	1	03BD-E421
	5	Analytical	4.6 x 250	1	03BD-E521
	5	Prep	10.0 x 150	1	03BD-H421
	5	Prep	10.0 x 250	1	03BD-H521
	5	Prep	21.2 x 150	1	03BD-I421
	5	Prep	21.2 x 250	1	03BD-I521
	10	Analytical	4.6 x 250	1	03BD-E531
	10	Prep	10.0 x 150	1	03BD-H431
	10	Prep	10.0 x 250	1	03BD-H531
	10	Prep	21.2 x 150	1	03BD-I431
	10	Prep	21.2 x 250	1	03BD-I531

Ordering Information					
Phase	Particle Size (µm)	Formats	I.D. Length (mm)	QTY	Part No.
VertiSep™ HCS					
C4	3	Ultra-Fast	2.1 x 10	1	03BC-B111
	3	Ultra-Fast	2.1 x 20	1	03BC-B611
	3	Ultra-Fast	2.1 x 50	1	03BC-B211
	3	LC/MS	2.1 x 100	1	03BC-B311
	3	LC/MS	2.1 x 150	1	03BC-B411
	3	LC/MS	3.2 x 100	1	03BC-C311
	3	LC/MS	3.2 x 150	1	03BC-C411
	3	Analytical	4.6 x 100	1	03BC-E311
	3	Analytical	4.6 x 150	1	03BC-E411
	5	LC/MS	2.1 x 100	1	03BC-B321
	5	LC/MS	2.1 x 150	1	03BC-B421
	5	LC/MS	2.1 x 250	1	03BC-B521
	5	LC/MS	3.2 x 100	1	03BC-C321
	5	LC/MS	3.2 x 150	1	03BC-C421
	5	LC/MS	3.2 x 250	1	03BC-C521
	5	Analytical	4.6 x 100	1	03BC-E321
	5	Analytical	4.6 x 150	1	03BC-E421
	5	Analytical	4.6 x 250	1	03BC-E521
	5	Prep	10.0 x 150	1	03BC-H421
	5	Prep	10.0 x 250	1	03BC-H521
	5	Prep	21.2 x 150	1	03BC-I421
	5	Prep	21.2 x 250	1	03BC-I521
	10	Analytical	4.6 x 250	1	03BC-E531
	10	Prep	10.0 x 150	1	03BC-H431
	10	Prep	10.0 x 250	1	03BC-H531
	10	Prep	21.2 x 150	1	03BC-I431
	10	Prep	21.2 x 250	1	03BC-I531



Ordering Information					
Phase	Particle Size (µm)	Formats	I.D. Length (mm)	QTY	Part No.
VertiSep™ HCS					
CN	3	Ultra-Fast	2.1 x 10	1	03BE-B111
	3	Ultra-Fast	2.1 x 20	1	03BE-B611
	3	Ultra-Fast	2.1 x 50	1	03BE-B211
	3	LC/MS	2.1 x 100	1	03BE-B311
	3	LC/MS	2.1 x 150	1	03BE-B411
	3	LC/MS	3.2 x 100	1	03BE-C311
	3	LC/MS	3.2 x 150	1	03BE-C411
	3	Analytical	4.6 x 100	1	03BE-E311
	3	Analytical	4.6 x 150	1	03BE-E411
	5	LC/MS	2.1 x 100	1	03BE-B321
	5	LC/MS	2.1 x 150	1	03BE-B421
	5	LC/MS	2.1 x 250	1	03BE-B521
	5	LC/MS	3.2 x 100	1	03BE-C321
	5	LC/MS	3.2 x 150	1	03BE-C421
	5	LC/MS	3.2 x 250	1	03BE-C521
	5	Analytical	4.6 x 100	1	03BE-E321
	5	Analytical	4.6 x 150	1	03BE-E421
	5	Analytical	4.6 x 250	1	03BE-E521
	5	Prep	10.0 x 150	1	03BE-H421
	5	Prep	10.0 x 250	1	03BE-H521
	5	Prep	21.2 x 150	1	03BE-I421
	5	Prep	21.2 x 250	1	03BE-I521
	10	Analytical	4.6 x 250	1	03BE-E531
	10	Prep	10.0 x 150	1	03BE-H431
	10	Prep	10.0 x 250	1	03BE-H531
	10	Prep	21.2 x 150	1	03BE-I431
	10	Prep	21.2 x 250	1	03BE-I531

Ordering Information			
Description	QTY	Part No.	
Guard Holder with Coupler			
For column I.D. 2.1-7.8 mm	1	0300-0001	
For column I.D. 10 mm	1	0300-0002	
For column I.D. 21.2 mm	1	0300-0003	



Ordering Information					
Phase	Particle Size (µm)	Formats	I.D. Length (mm)	QTY	Part No.
VertiSep™ AQS Guard Cartridges*					
C18	3	Guard	2.1 x 10	2	03BA-B113
	3	Guard	3.2 x 10	2	03BA-C113
	3	Guard	4.6 x 10	2	03BA-E113
	5	Guard	2.1 x 10	2	03BA-B123
	5	Guard	3.2 x 10	2	03BA-C123
	5	Guard	4.6 x 10	2	03BA-E123
	5	Guard	10.0 x 10	2	03BA-H123
	5	Guard	21.2 x 10	2	03BA-I123
	10	Guard	4.6 x 10	2	03BA-E133
	10	Guard	10.0 x 10	2	03BA-H133
C8	3	Guard	2.1 x 10	2	03BB-B113
	3	Guard	3.2 x 10	2	03BB-C113
	3	Guard	4.6 x 10	2	03BB-E113
	5	Guard	2.1 x 10	2	03BB-B123
	5	Guard	3.2 x 10	2	03BB-C123
	5	Guard	4.6 x 10	2	03BB-E123
	5	Guard	10.0 x 10	2	03BB-H123
	5	Guard	21.2 x 10	2	03BB-I123
	10	Guard	4.6 x 10	2	03BB-E133
	10	Guard	10.0 x 10	2	03BB-H133
Ph	3	Guard	2.1 x 10	2	03BD-B113
	3	Guard	3.2 x 10	2	03BD-C113
	3	Guard	4.6 x 10	2	03BD-E113
	5	Guard	2.1 x 10	2	03BD-B123
	5	Guard	3.2 x 10	2	03BD-C123
	5	Guard	4.6 x 10	2	03BD-E123
	5	Guard	10.0 x 10	2	03BD-H123
	5	Guard	21.2 x 10	2	03BD-I123
	10	Guard	4.6 x 10	2	03BD-E133
	10	Guard	10.0 x 10	2	03BD-H133
C4	10	Guard	21.2 x 10	2	03BD-I133
	3	Guard	2.1 x 10	2	03BC-B113
	3	Guard	3.2 x 10	2	03BC-C113
	3	Guard	4.6 x 10	2	03BC-E113
	5	Guard	2.1 x 10	2	03BC-B123
	5	Guard	3.2 x 10	2	03BC-C123
	5	Guard	4.6 x 10	2	03BC-E123
	5	Guard	10.0 x 10	2	03BC-H123
	5	Guard	21.2 x 10	2	03BC-I123
	10	Guard	4.6 x 10	2	03BC-E133
CN	10	Guard	10.0 x 10	2	03BC-H133
	10	Guard	21.2 x 10	2	03BC-I133
	3	Guard	2.1 x 10	2	03BE-B113
	3	Guard	3.2 x 10	2	03BE-C113
	3	Guard	4.6 x 10	2	03BE-E113
	5	Guard	2.1 x 10	2	03BE-B123
	5	Guard	3.2 x 10	2	03BE-C123
	5	Guard	4.6 x 10	2	03BE-E123
	5	Guard	10.0 x 10	2	03BE-H123
	5	Guard	21.2 x 10	2	03BE-I123
10	Guard	4.6 x 10	2	03BE-E133	
10	Guard	10.0 x 10	2	03BE-H133	
10	Guard	21.2 x 10	2	03BE-I133	

*Guard holder required