IC Columns Introduction

Alltech® IC Column Specifications

Column	Composition	pH Range	Applications	EPA Methods	Optimized for Suppressed or Non-Suppressed Conductivity	Page
Anion Exchange Columns						
Allsep™	polymer-based anion exchanger, 7µm	pH 2–10	inorganic anions, weak and strong acid ions, metal complexes, organic acids	300.0, Part A	both	99
Allsep™ A-2	polymer-based anion exchanger, 7µm	pH 2–11	inorganic anions, organic acids, suitable for both weak and strong anions in a single run	300.0, Part A	both	99
Novosep™ A-2	polymer-based anion exchanger, 5µm	pH 3–12	inorganic anions and oxyhalides; ideal for separation of seven common anions plus three oxyhalide anions in one run	300.0, 300.1, 317.0, 326.0	suppressed	100
AN1™	polymer-based anion exchanger, 9µm	pH 2–13	inorganic anions, weak and strong acid ions, organic acids	—	both	100
Anion/S	silica-based anion exchanger, 10µm	pH 2–5.5	inorganic anions	—	non-suppressed	101
Anion/R	polymer-based anion exchanger, 10µm	pH 2–12	inorganic anions, weak and strong acid ions	—	non-suppressed	101
PRP™-X100	polymer-based anion exchanger, 10µm	pH 1–13	inorganic anions, weak and strong acid ions	—	non-suppressed	103
Cation Exchange Columns						
Universal Cation	silica-based cation exchanger, 7µm	pH 2–7	groups I and II cations, amines, divalent transition metals	300.7	both	102
Universal Cation HR	silica-based cation exchanger, 3µm	pH 2–7	groups I and II cations, amines, divalent transition metals; smaller particle size for improved peak resolution	300.7	both	102
PRP™-X200	polymer-based cation exchanger, 10µm	pH 1–13	groups I and II cations (separate runs), amines, lanthanides	—	non-suppressed	103
Organic Acid Columns						
PRP™-X300	polymer-based sulfonated cation exchanger	pH 1–13	simple aliphatic carboxylic acids and alcohols	—	non-suppressed	103
Anion Exclusion	polymer-based cation exchanger, 10µm	pH 1–13	organic acids, weak acid anions	—	non-suppressed	104
Specialty Columns						
Transition Metal	silica-based reversed-phase, 3µm and 7µm	pH 2–7	high capacity, separates divalent transition metals and metal-cyano complexes more selectively than a cation exchange column	—	non-suppressed	104
Surfactant/R	polymer-based reversed-phase, 7µm	pH 1–14	anionic and cationic surfactants; separate short and long chain surfactants in one gradient run	—	both	105
Surfactant C8	silica-based reversed-phase, 5µm	pH 2–7	short chain anionic surfactants	—	non-suppressed	105
Surfactant C18	silica-based reversed-phase, 5µm	pH 2–7	long chain or aromatic anionic surfactants	—	non-suppressed	105

IC Guard Kits Cross Reference

Kit includes holder and three guard cartridges.

Guard Reference Table

Brand	Column Type	Guard Cartridge Type	All-Guard™ Kit Part No.
Alltech	Allsep™, Allsep™ A-2	GA-1	**38109**
	Novosep™ A-2	GA-1	**38109**
	Anion/R, Anion/S	GA-1	**38109**
	Universal Cation	GC-2	**27109**
	Universal Cation HR	GC-3	**23115**
	Anion Exclusion	GIE-1	**38117**
	Transition Metal C18	GRP-2	**38123**
	Surfactant/R	GRP-1	**38122**
	Surfactant C8, C18	GRP-2	**38123**
Dionex	IonPac® AS4A-SC, AS7, AS11, AS22, AS24, AS26, AS27	GA-1	**38109**
	IonPac® CS3, CS10, CS11	GC-1	**38113**
	IonPac® CS12, CS14, CS15	GC-2	**27109**
	IonPac® NS1	GRP-1	**38122**
	IonPac® AS1, AS5	GIE-1	**38117**

Guard Reference Table (continued)

Brand	Column Type	Guard Cartridge Type	All-Guard™ Kit Part No.
Waters	IC-Pak™-A	GA-1	**38109**
	IC-Pak™-M/D	GC-2	**27109**
	Ion Exclusion	GIE-1	**38117**
Hamilton	PRP™-X100	GA-1	**38109**
	PRP™-X200	GC-1	**38113**
	PRP™-X300	GIE-1	**38117**
Misc.	Sarasep ANIONSEP AN1™	GA-1	**38109**
	Bio-Rad®, Aminex®, HPX-87	GIE-1	**38117**
	Interaction™ ION-120	GA-1	**38109**
	Interaction™ ION-210	GC-1	**38113**
	Interaction™ ORH-801	GIE-1	**38117**
	Metrohm® Metrosep	GA-1	**38109**

more info

Cartridges and holders can also be purchased separately. See specific phase pages for replacement cartridge ordering information.

Alltech® Anion Columns

Allsep™ Anion IC Columns

- Resolves fluoride away from the water dip
- Meets requirements for U.S. EPA Method 300.0 part A

The Allsep™ Anion Column is compatible with common IC mobile phases: carbonate, bicarbonate, p-hydroxybenzoic acid, phthalic acid, succinic acid, and sodium octane sulfonate.

Use this column for performing EPA Method 300.0 Part A "Determination of Inorganic Anions in Water" per U.S. EPA guidelines.

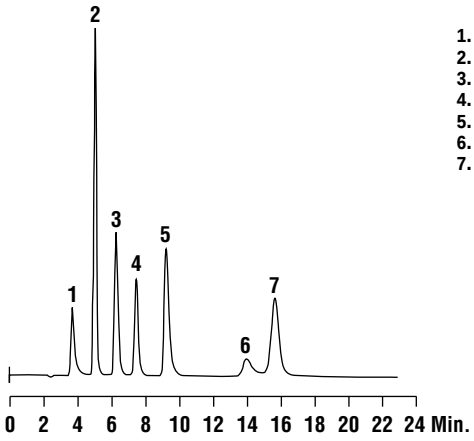
Allsep™ A-2 Anion IC Columns

- Separates both weak and strong acid anions in one run
- Resolves formate away from fluoride and chloride

The Allsep™ A-2 Anion Column separates both weakly retained organic and strongly retained inorganic anions in one run. The high capacity Allsep™ A-2 Anion Column is also suitable for the separation of chlorite and chlorate.

Resolves Fluoride Away from the Water Dip

CHROM 13033

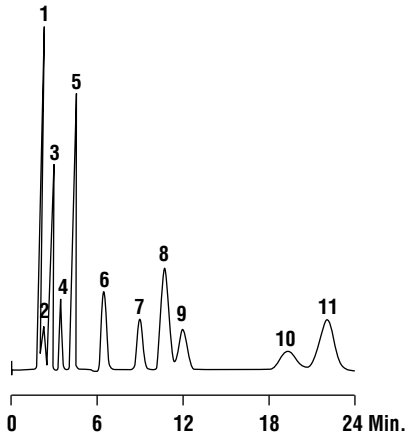


1. Fluoride
2. Chloride
3. Nitrite
4. Bromide
5. Nitrate
6. Phosphate
7. Sulfate

Column: Allsep™ Anion, 7µm, 4.6 x 100mm (Part No. **51207**)
Mobile Phase: 0.85mM $NaHCO_3$/0.9mM Na_2CO_3
Flow Rate: 1.2mL/min
Detector: Suppressed Conductivity

Organic and Inorganic Anions

CHROM 8747



1. Fluoride (1.0ppm)
2. Acetate (1.0ppm)
3. Formate (1.0ppm)
4. Chlorite (1.0ppm)
5. Chloride (2.0ppm)
6. Nitrite (2.0ppm)
7. Bromide (2.0ppm)
8. Chlorate (5.0ppm)
9. Nitrate (2.0ppm)
10. Phosphate (3.0ppm)
11. Sulfate (3.0ppm)

Column: Allsep™ A-2 Anion, 7µm, 4.6 x 100mm (Part No. **51219**)
Mobile Phase: 2.1mM $NaHCO_3$/1.6mM Na_2CO_3
Flow Rate: 2.0mL/min
Detector: Suppressed Conductivity

Allsep™ Anion Specifications	
Composition:	Methacrylate based w/quaternary ammonium functional groups
Particle Size:	7µm
Mobile Phase Limits:	pH 2–10, 0–100% organic modifier

Allsep™ A-2 Anion Specifications	
Composition:	Methacrylate based w/quaternary alkanol amine functional groups
Particle Size:	7µm
Mobile Phase Limits:	pH 2–11, 0–100% organic modifier

Allsep™ Anion Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
Allsep™ Anion	4.6 x 30mm	**51217**	**51216**
	4.6 x 50mm	**51213**	**51214**
	4.6 x 100mm	**51207**	**51200**
	4.6 x 150mm	**51209**	**51208**

Allsep™ A-2 Anion Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
Allsep™ A-2	4.6 x 50mm	**51221**	**51220**
	4.6 x 100mm	**51219**	**51218**

related product

Save money with IC All-Guard™ Kits on page 98. Kit includes one holder and three cartridges.

Guards for Allsep™ and Allsep™ A-2 Columns

Description	Qty.	Part No.
GA-1 Anion Cartridges	3	**38108**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.

Alltech® Anion Columns

Novosep™ A-2 Anion IC Columns

- Separates seven inorganic anions and three oxyhalide anions in a single run
- Meets the requirements of U.S. EPA Methods 300.0, 300.1, 317.0, and 326.0

The Novosep™ A-2 Anion Column is ideal for the separation of 10 inorganic anions by suppressor-based ion chromatography using U.S. EPA Method 300.1. The column can also be used to determine inorganic anions in drinking water per U.S. EPA Method 300.0 and trace bromate in drinking water using U.S. EPA Methods 317.0 and 326.0.

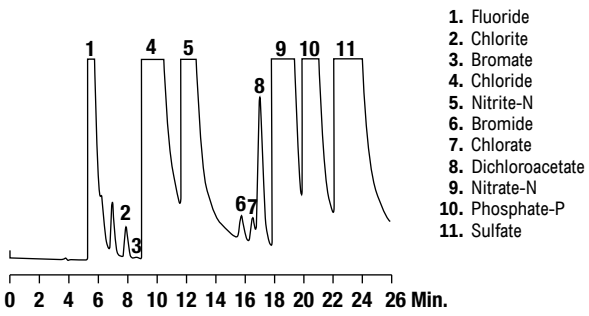
IC Sep AN1™ IC Column

- Separates anions with carbonate/bicarbonate and hydroxide mobile phases

The IC Sep AN1™ Column is compatible with both suppressor-based and non-suppressed detection. A variety of mobile phases including sodium carbonate/bicarbonate, sodium hydroxide, and borate/gluconate may be used.

Anions in High Ionic Strength Water by EPA Method 300.0

CHROM 10121

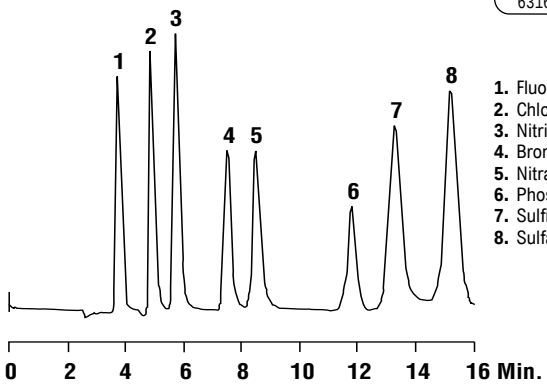


1. Fluoride
2. Chlorite
3. Bromate
4. Chloride
5. Nitrite-N
6. Bromide
7. Chlorate
8. Dichloroacetate
9. Nitrate-N
10. Phosphate-P
11. Sulfate

Column: Novosep™ A-2 Anion, 5µm, 4.0 x 250mm (Part No. **51410**)
Mobile Phase: 3.6mM $NaHCO_3$
Flow Rate: 0.8mL/min
Detector: Suppressed Conductivity

Separation of Sulfite and Sulfate

CHROM 6316



1. Fluoride
2. Chloride
3. Nitrite
4. Bromide
5. Nitrate
6. Phosphate
7. Sulfite
8. Sulfate

Column: IC Sep AN1™, 9µm, 4.6 x 250mm (Part No. **38140**)
Mobile Phase: 1.8mM $NaHCO_3$, 1.8mM Na_2CO_3
Flow Rate: 1.0mL/min
Detector: Suppressed Conductivity

Novosep™ A-2 Anion Specifications	
Composition:	Polyvinyl alcohol-based w/quaternary ammonium functional groups
Particle Size:	5µm
Mobile Phase Limits:	pH 3–12, 0–100% organic modifier, 10% modifier is practical upper limit

IC Sep AN1™ Specifications	
Composition:	Poly(styrene-divinylbenzene) alkyl dimethyl ethanol ammonium functional group
Particle Size:	9µm
Exchange Capacity:	0.05meq/g
Mobile Phase Limits:	pH 2–13, No organic solvents

Novosep™ A-2 Anion Column

Packing	i.d. x Length	PEEK Part No.
Novosep™ A-2	4.0 x 250mm	**51410**

Guards for Novosep™ A-2 Anion Columns

Description	Qty.	Part No.
GA-1 Anion Cartridges	3	**38108**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.

IC Sep AN1™ Columns

Packing	i.d. x Length	Part No.
AN1™	4.6 x 250mm	**38140**

Choose a guard column or integral guard discs to protect your IC Sep Column.

IC Sep Guards

Description	Qty.	Part No.
Guard Column, 50 x 4.6mm	ea	**38145**
Guard Column Guard-Disc™	5	**38146**

more applications
To view our complete searchable chromatogram database visit www.discoverysciences.com/chromdb/

Alltech® Anion Columns

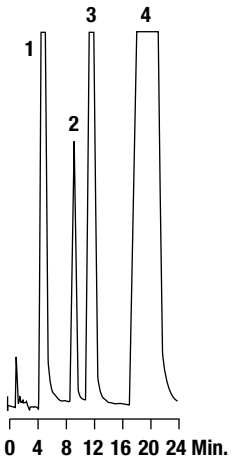
Anion/S IC Columns

- Silica-based for symmetrical peak shapes
- Separates inorganic and organic anions

The Anion/S Columns are best suited for routine separations of chloride, bromide, nitrate, and sulfate. Not suitable for fluoride analysis.

EDTA and Other Anions

CHROM 8284



1. Nitrite
2. EDTA
3. Nitrate
4. Bromide

Column: Anion/S, 10µm, 4.6 x 100mm (Part No. **269012**)
Mobile Phase: 1.5mM Sulfuric Acid
Flow Rate: 1.0mL/min
Detector: UV at 210nm

Anion/S Specifications	
Composition:	Silica w/quaternary ammonium ion exchanger
Particle Size:	10µm
Exchange Capacity:	0.25meq/g
Mobile Phase Limits:	pH 2–5.5, 0–100% organic modifier

Anion/S Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
Anion/S	4.6 x 100mm	**269012**	**269013**
	4.6 x 250mm	**269011**	**269001**

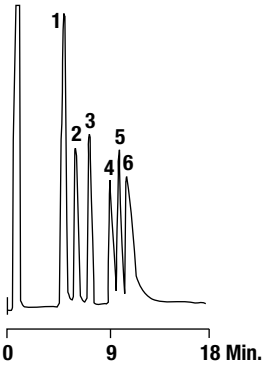
Anion/R IC Columns

- Polymer-based for broad pH stability
- Separates seven common inorganic anions

Because of their high pH stability, these columns are ideal for the separation of anions using high pH mobile phases such as p-hydroxybenzoate, sodium hydroxide, and sodium carbonate/bicarbonate. The larger dimension columns (150mm and 250mm) are suitable for a high-resolution separation of the seven common inorganic anions.

Weak Acid Anions

CHROM 5697



1. Borate (5ppm)
2. Silicate (10ppm)
3. Formate (10ppm)
4. Sulfide (10ppm)
5. Chloride (20ppm)
6. Cyanide (20ppm)

Column: Anion/R, 10µm, 4.1 x 250mm (Part No. **269029**)
Mobile Phase: 4mM Sodium Hydroxide/0.1mM Sodium Benzoate
Flow Rate: 1.5mL/min
Detector: Conductivity

Anion/R Specifications	
Composition:	Poly(styrene-divinylbenzene) Trimethylammonium
Particle Size:	10µm
Exchange Capacity:	0.19 ± 0.02meq/g
Mobile Phase Limits:	pH 2–12, 0–100% organic modifier

Anion/R Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
Anion/R	4.1 x 100mm	—	**269031**
	4.1 x 250mm	—	**269029**
	4.6 x 100mm	**269036**	—
	4.6 x 150mm	**269034**	—

Guards for Anion/S and Anion/R Columns

Description	Qty.	Part No.
GA-1 Anion Cartridges	3	**38108**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.

related product

Save money with IC All-Guard™ Kits on page 98. Kit includes one holder and three cartridges.

Alltech® Cation Columns

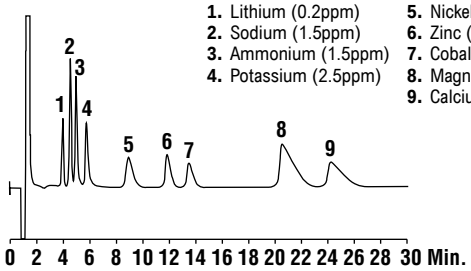
Universal Cation and Universal Cation HR IC Columns

- Separate Groups I and II cations in one isocratic run
- Separate transition metals without post-column reaction
- New Universal Cation HR 3µm particle size for improved efficiency

Compatible with a variety of mobile phases including complexing acids (citric acid, tartaric acid, oxalic acid), mineral acids (nitric acid, hydrochloric acid, sulfuric acid) and non-complexing organic acids (methanesulfonic acid).

Metal Ions

CHROM 10318

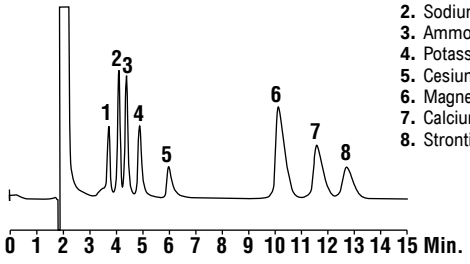


1. Lithium (0.2ppm)
2. Sodium (1.5ppm)
3. Ammonium (1.5ppm)
4. Potassium (2.5ppm)
5. Nickel (2.5ppm)
6. Zinc (2.5ppm)
7. Cobalt (2.5ppm)
8. Magnesium (2.0ppm)
9. Calcium (2.0ppm)

Column: Universal Cation, 7µm, 4.6 x 100mm (Part No. **27106**)
Mobile Phase: 2mM Tartaric Acid/1mM Oxalic Acid
Flow Rate: 1.0mL/min
Detector: Conductivity

Cesium and Strontium

CHROM 13035

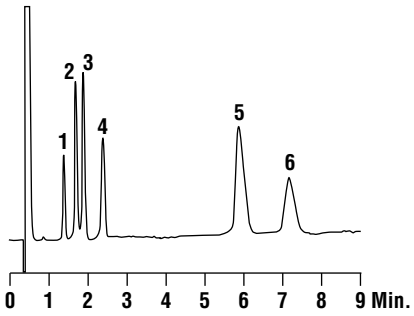


1. Lithium (0.12ppm)
2. Sodium (0.90ppm)
3. Ammonium (0.90ppm)
4. Potassium (1.5ppm)
5. Cesium (0.8ppm)
6. Magnesium (1.2ppm)
7. Calcium (1.2ppm)
8. Strontium (1.6ppm)

Column: Universal Cation, 7µm, 4.6 x 100mm (Part No. **27106**)
Mobile Phase: 3mM Methanesulfonic Acid
Flow Rate: 1.0mL/min
Detector: Conductivity

Rapid Analysis of Monovalent and Divalent Cations

CHROM 13013



1. Lithium
2. Sodium
3. Ammonium
4. Potassium
5. Magnesium
6. Calcium

Column: Universal Cation HR, 3µm, 7.0 x 53mm (Part No. **23109**)
Mobile Phase: 3mM Methanesulfonic Acid
Flow Rate: 2.5mL/min
Detector: Conductivity

Universal Cation Specifications	
Composition:	Silica coated with polybutadiene/maleic acid copolymer
Particle Size:	3µm and 7µm, spherical
Mobile Phase Limits:	pH 2–7, 0–100% organic modifier

Universal Cation Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
7µm	4.6 x 100mm	**27106**	**27100**
3µm HR	4.6 x 100mm	—	**23100**
	7.0 x 53mm	—	**23109**

technical assistance

Contact Tech Support: Phone: 1.800.255.8324 (North America)
Email: contact.alltech@grace.com
Online: www.discoverysciences.com

more applications

To view our complete searchable chromatogram database visit www.discoverysciences.com/chromdb/

Guards for Universal Cation Columns

Description	Qty.	Part No.
GC-2 Universal Cation	3	**271010**
GC-3 Universal Cation HR	3	**23110**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.

related product

Save money with IC All-Guard™ Kits on page 98. Kit includes one holder and three cartridges.

Hamilton® Anion, Cation, and Organic Acid Columns

PRP™-X100 Anion Columns

High pH stability makes this column ideal for the separation of weak anions. PRP™-X100 provides excellent resolution for the seven most frequently analyzed inorganic anions. For non-suppressed analyses only.

PRP™-X200 Cation Analysis Columns

For separation of the alkali metal and alkaline earth cations in separate runs.

PRP™-X300 Organic Acid Columns

For separation of simple aliphatic carboxylic acids and alcohols. Inorganic anions are not retained.

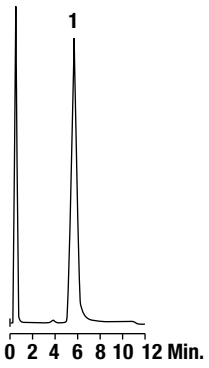
Hamilton® PRP™-X100 Specifications	
Composition:	Trimethylammonium psDVB copolymer
Particle Size:	10µm, spherical
Exchange Capacity:	0.19meq/g
Mobile Phase Limits:	pH 1–13, 0–100% organic modifier

Hamilton® PRP™-X200 Specifications	
Composition:	Sulfonated psDVB copolymer
Particle Size:	10µm, spherical
Exchange Capacity:	0.35meq/g
Mobile Phase Limits:	pH 1–13, 0–100% organic modifier

Hamilton® PRP™-X300 Specifications	
Composition:	Sulfonated psDVB in H+ form
Particle Size:	3µm and 7µm
Mobile Phase Limits:	pH 1–13, 0–100% organic modifier

EDTA in Eye Drops

CHROM 8068

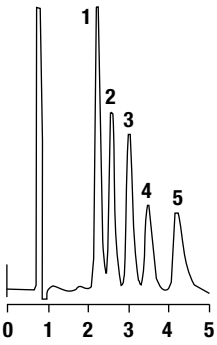


1. CuEDTA

Column: PRP™-X100, 10µm, 4.1 x 150mm (Part No. **79434**)
Mobile Phase: 0.003N Sulfuric Acid
Flow Rate: 2mL/min
Detector: UV at 254nm

Alkali Metals

CHROM 5204



1. Lithium
2. Sodium
3. Ammonium
4. Potassium
5. Cesium

Column: PRP™-X200, 10µm, 4.1 x 150mm (Part No. **79441**)
Mobile Phase: 0.004N HNO_3 in 30% MeOH
Flow Rate: 2mL/min
Detector: Conductivity

Hamilton® PRP™-X100 Columns

Packing	i.d. x Length	Part No.
PRP™-X100	2.1 x 150mm	**79348**
	2.1 x 250mm	**79346**
	4.1 x 100mm	**79439**
	4.1 x 150mm	**79434**
	4.1 x 250mm	**79433**

Hamilton® PRP™-X200 Columns

Particle Size	i.d. x Length	Part No.
PRP™-X200	2.1 x 150mm	**79394**
	2.1 x 250mm	**79347**
	4.1 x 150mm	**79441**
	4.1 x 250mm	**79442**

Hamilton® PRP™-X300 Columns

Particle Size	i.d. x Length	Part No.
PRP™-X300, 3µm	4.1 x 150mm	**79819**
PRP™-X300, 7µm	4.1 x 150mm	**79464**
	4.1 x 250mm	**79465**
	4.6 x 150mm	**79485**

Hamilton® PRP™-X100 Guard Kits and Cartridges

Description	Qty.	Part No.
Guard Column Starter Kit PRP™-X100, 1 Holder, 2 Cartridges	ea	**79448**
Replacement Guard Cartridges (Requires Hamilton® Guard Holder) PRP™-X100, 25 x 2.3mm	5	**79446**

Hamilton® PRP™-X200 Guard Kits and Cartridges

Description	Qty.	Part No.
Guard Column Starter Kit PRP™-X200, 1 Holder, 2 Cartridges	ea	**79456**
Replacement Guard Cartridges (Requires Hamilton® Guard Holder) PRP™-X200, 25 x 2.3mm	5	**79449**

Hamilton® PRP™-X300 Guard Kits and Cartridges

Description	Qty.	Part No.
Guard Column Starter Kit PRP™-X300, 1 Holder, 2 Cartridges	ea	**79460**
Replacement Guard Cartridges (Requires Hamilton® Guard Holder) PRP™-X300, 25 x 2.3mm	5	**79453**

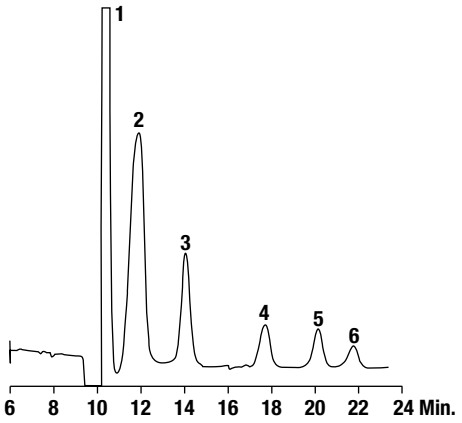
Alltech® Anion Exclusion Columns

- Separate organic acids and weak acid anions
- Polymer-based for broad pH stability
- Economical choice for small inorganics

Anion Exclusion Columns separate organic acids and weakly ionized anions by an anion exclusion mechanism. Dilute mineral acids are the typical mobile phases for the separation. Acetonitrile may be used as an organic modifier to decrease the retention of hydrophobic compounds.

Organic Acid Standards

CHROM 13037



1. Oxalic Acid
2. Maleic Acid
3. Malic Acid
4. Succinic Acid
5. Formic Acid
6. Acetic Acid

Column: Anion Exclusion, 10µm, 7.5 x 300mm (Part No. **269062**)
Mobile Phase: 1.5mM Sulfuric Acid
Flow Rate: 0.4mL/min
Detector: Conductivity

Anion Exclusion Specifications	
Composition:	Highly sulfonated poly (styrene-divinylbenzene) cation exchanger
Particle Size:	10µm
Mobile Phase Limits:	<10% acetonitrile, no methanol <5% isopropyl or ethyl alcohols

Anion Exclusion Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
Anion Exclusion, 10µm	7.5 x 100mm	**269069**	—
	7.5 x 300mm	**269062**	—
	7.8 x 100mm	—	**269068**
	7.8 x 300mm	—	**269006**

Anion Exclusion All-Guard™ Cartridges

Description	Qty.	Part No.
Anion Exclusion GIE-1	3	**38118**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.

related product

Save money with IC All-Guard™ Kits on page 98. Kit includes one holder and three cartridges.

Alltech® Transition Metal Columns

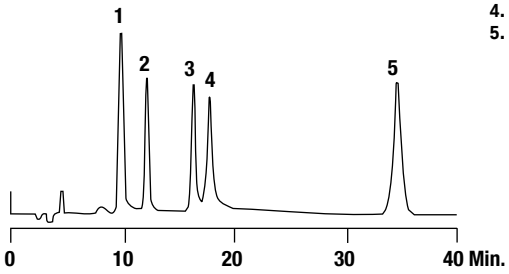
- Separate divalent transition metals and metal-cyano complexes more selectively than a cation exchange column

To separate divalent transition metals, use conductivity detection for concentrations as low as 1ppm, or UV detection with post-column reaction for ppb-level concentrations

To separate metal-cyano complexes, use the Alltech® low UV IPC A (Part No. **185149**) as the ion-pair reagent, and methanol or acetonitrile as the organic modifier.

Metal-Cyano Complexes

CHROM 5358



1. $Fe(CN)_6^{4-}$
2. $Ag(CN)_2^-$
3. $Fe(CN)_6^{3-}$
4. $Ni(CN)_4^{2-}$
5. $Au(CN)_2^-$

Column: Transition Metal C18, 7µm, 4.6 x 250mm (Part No. **269067**)
Mobile Phase: 0.005M Tetrabutylammonium Sulfate (Preformulated Alltech® Low UV IPC A, Part No. **185149**) in 30% Acetonitrile
Flow Rate: 0.7mL/min
Detector: UV at 214nm

Transition Metal Specifications	
Composition:	Silica-based with C18 bonded phase (20% Carbon)
Particle Size:	3µm and 7µm, spherical
Mobile Phase Limits:	pH 2–7

Transition Metal Columns

Packing	i.d. x Length	PEEK Part No.
C18, 3µm	4.6 x 100mm	**269064**
C18, 7µm	4.6 x 250mm	**269067**

Transition Metal All-Guard™ Cartridges

Description	Qty.	Part No.
GRP-2 Revised Phase	3	**38129**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.

Alltech® Surfactant Columns

Surfactant/R IC Columns

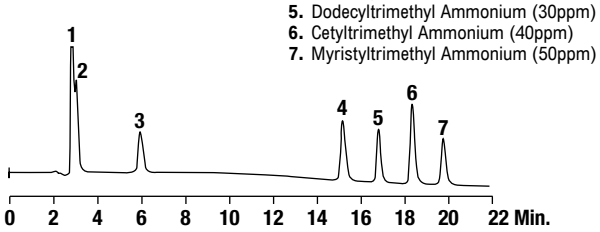
- Separate anionic and cationic surfactants
- Separate short and long chain surfactants in one gradient run

The Surfactant/R Column separates anionic and cationic surfactants by ion-pair chromatography along with suppressed conductivity detection. This column can also be used for other reversed-phase applications.

Short and Long Chain Cationic Surfactants

CHROM 10317

1. Tetramethyl Ammonium (20ppm)
2. Tetraethyl Ammonium (20ppm)
3. Tetrapropyl Ammonium (20ppm)
4. Tetrabutyl Ammonium (30ppm)
5. Dodecyltrimethyl Ammonium (30ppm)
6. Cetyltrimethyl Ammonium (40ppm)
7. Myristyltrimethyl Ammonium (50ppm)



Column: Surfactant/R Column, 7µm, 4.6 x 150mm (Part No. **25101**)
Mobile Phase: **A:** 2mM Nonafluoropentanoic Acid
B: 100% Acetonitrile
Gradient:

Time:	0	5	8	20
%B:	30	30	35	80

Flow Rate: 1.0mL/min
Detector: Suppressed Conductivity

Surfactant/R Specifications	
Composition:	Polydivinylbenzene (DVB) based resin
Particle Size:	7µm
Mobile Phase Limits:	pH 1–14, 0–100% organic modifier

Surfactant/R Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
Surfactant/R, 7µm	4.6 x 150mm	**25101**	**25100**

Guards for Surfactant/R Columns

Description	Qty.	Part No.
GRP-1 Revised Phase	3	**38124**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.

related product

Save money with IC All-Guard™ Kits on page 98. Kit includes one holder and three cartridges.

more applications

To view our complete searchable chromatogram database visit www.discoverysciences.com/chromdb/

Surfactant/C IC Columns

- For non-suppressed analyses
- Silica-based for symmetrical peak shapes

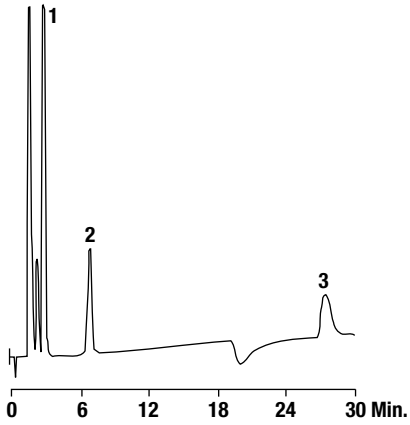
Choose Surfactant C8 for short chain anionic surfactants such as alkyl sulfates and alkyl sulfonates.

Choose Surfactant C18 for long chain or aromatic surfactants such as xylene sulfonate and dodecyl benzene sulfonate.

Alkyl Sulfates

CHROM 5998

1. Octyl Sulfate
2. Decyl Sulfate
3. Dodecyl Sulfate



Column: Surfactant C8, 5µm, 4.6 x 250mm (Part No. **269072**)
Mobile Phase: 0.02g/L Ammonium Acetate in 40% Methanol
Flow Rate: 1.2mL/min
Detector: Conductivity

Surfactant/C Specifications	
Composition:	Silica-based C8 or C18
Particle Size:	5µm
Mobile Phase Limits:	pH 2–7, 0–100% organic modifier

Surfactant/C Columns

Packing	i.d. x Length	PEEK Part No.	SS Part No.
C8, 5µm	4.6 x 250mm	**269072**	**269092**
C18, 5µm	4.6 x 250mm	**269071**	**269091**

Guards for Surfactant/C Columns

Description	Qty.	Part No.
GRP-2 Revised Phase	3	**38129**
All-Guard™ Cartridge Holder*	ea	**80101**

*Direct-Connect™ column coupler included.