Acclaim HPLC and UHPLC columns

Optimal selectivity through innovative chemistries

Designed for separating a variety of analytes, from small neutral and polar molecules to complex mixtures. Ideal for pharmaceutical, environmental, food and beverage and chemical applications.

Diversified selectivities
- Novel and proprietary surface chemistries

Reproducible and reliable
- Strict manufacturing and quality processes

High efficiencies
- For optimum resolution of complex mixtures

Ultra-pure, porous, spherical silica
- Providing consistent quality and performance

Download the Acclaim column selection guide **here**

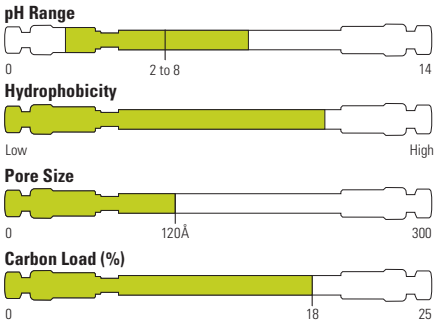
For more information, visit **thermofisher.com/acclaim**

Acclaim 120 C18

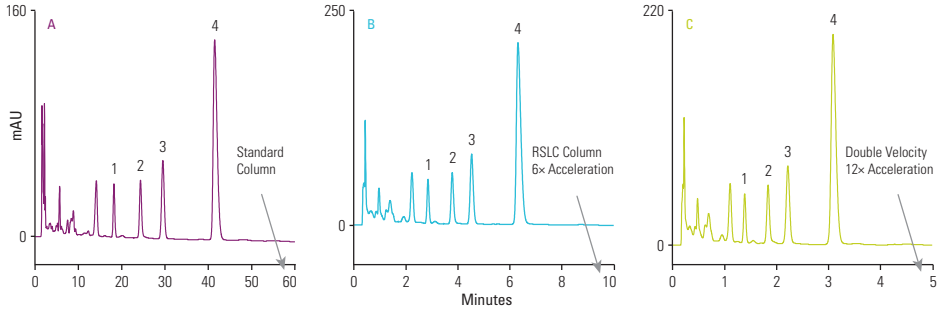
High performance reversed-phase columns for reproducible results

- High hydrophobic retention
- Excellent efficiencies for maximum resolution
- Low silanol activity for excellent peak shapes for basic analytes
- Extremely low bleed, fully compatible with MS

The Acclaim 120 columns are designed for high resolution reversed-phase separations. The very high surface coverage and very low metal content together result in columns with excellent efficiencies. These columns provide exceptional performance for a variety of applications in the pharmaceutical, chemical, environmental and food separations areas.



Particle Size 2.2µm, 3µm, 5µm **USP** L1



A: Acclaim 120 C18, 5µm, 150 x 4.6mm
B, C: Acclaim RSLC C18, 2.2µm, 50 x 2.1mm

Mobile Phase:	200mM HOAc in 10% (v/v) MeOH
Temperature:	20°C
Flow Rate:	A: 1.00mL/min B: 0.41mL/min C: 0.82mL/min
Injection Volume:	A: 10µL B: 1.2µL C: 1.2µL
Detection:	UV, 254 nm, A: 1 Hz data rate B: 5 Hz data rate C: 10 Hz data rate
Analytes:	1. p-Hydroxybenzoic acid 2. p-Hydroxybenzaldehyde 3. Vanillic acid 4. Vanillin
Sample:	Commercial vanilla extract in 40% ethanol, filtered
Reference:	AOAC Official Method 990.25

Acclaim 120 C18

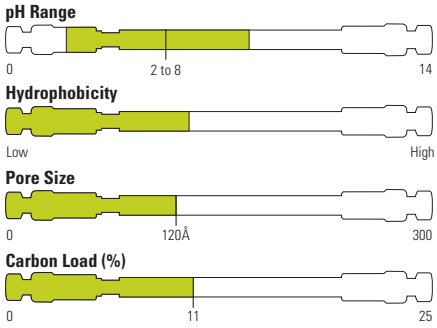
Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
2.2	RSLC Column	30	071400	071606	-
		50	068981	071605	-
		75	-	075697	-
		100	068982	071604	-
		150	071399		-
		250	074812		-
3	HPLC Column	33	-	066272	-
		50	059128	068971	059131
		75	-	066273	-
		100	059129	076186	059132
		150	059130	063691	059133
		250	076187	070077	-
5	Guard Cartridge (2/pk)	10	069689	071981	069695
	HPLC Column	50	059142	-	059146
		100	059143	-	059147
		150	059144	-	059148
		250	059145	-	059149

Acclaim 120 C8

High performance reversed-phase columns with intermediate hydrophobic retention

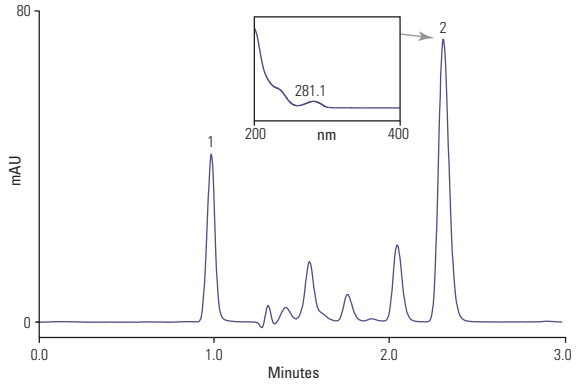
- Low silanol activity for excellent peak shapes for basic analytes
- Excellent column efficiencies
- LC-MS compatible

Acclaim 120 C8 reversed-phase columns feature densely bonded monolayer C8 ligands on a high-purity, spherical porous silica substrate. The columns are a well-characterized line of LC-MS compatible C8 phases with very high surface coverage and extremely low silanol activity. These columns provide exceptional performance for a variety of applications in the pharmaceutical, environmental, food and many other industrial sectors.



Particle Size 2.2µm, 3µm, 5µm **USP** L7

Triclosan in toothpaste



Column: Acclaim RSLC C8, 2.2µm, 50 x 2.1mm

Mobile Phase:	Isocratic, 15% buffer, (2mM Ammonium acetate pH5), 85% methanol (v/v)
Temperature:	50°C
Flow Rate:	0.2mL/min
Injection Volume:	1.0µL
Detection:	Diode array detector, 281nm, 10Hz, 0.1 s resp. time and spectra 200–400 nm
Analytes:	1. Saccharin 2. Triclosan
Sample:	Toothpaste containing 0.3% triclosan

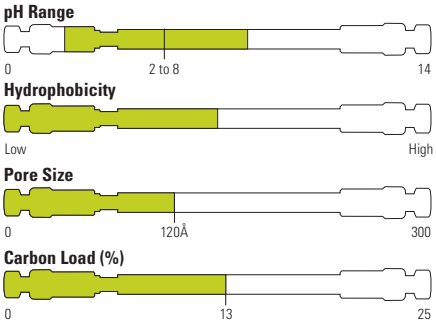
Acclaim 120 C8

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
2.2	RSLC Column	30	-	072618	-
		50	072615	072619	-
		100	072616	072620	-
		150	072617	-	-
		250	074811	-	-
3	HPLC Column	50	059122	-	059125
		100	059123	-	059126
		150	059124	068970	059127
5	Guard Cartridge	10	069688	071979	069696
	HPLC Column	50	059134	-	059138
		100	-	-	059139
		150	059136	-	059140
		250	-	-	059141

Acclaim Phenyl-1

A unique reversed-phase column with high aromatic selectivity

- High aromatic selectivity
- High hydrophobic retention
- Unique and complementary selectivity compared to any other phenyl type column
- Compatibility with highly aqueous mobile phase
- High efficiency and rugged packing

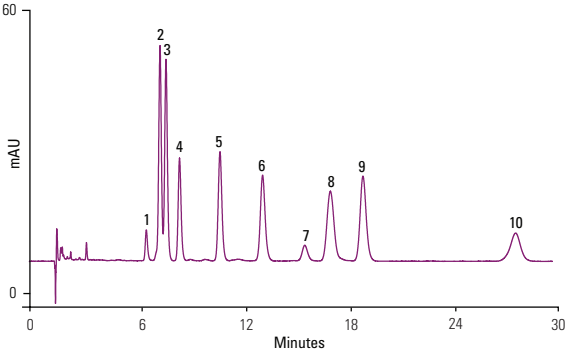


Particle Size 3µm, 5µm **USP** L11

Acclaim Phenyl-1 has a higher pi-pi interaction than other phenyl phases and provides unique selectivity for aromatic compounds while maintaining sufficient hydrophobic interaction and aqueous compatibility for superior chromatographic performance.

The Acclaim Phenyl-1 column can be used in a wide range of applications in pharmaceutical, environmental, food testing and product-quality testing. This column is ideally suited for the analysis of aromatic analytes; some examples include glucocorticosteroids, estrogens, fat-soluble vitamins and phospholipids.

Separation of fat-soluble vitamins



Acclaim Phenyl-1, 3µm, 150 x 3.0mm

Mobile Phase:	Methanol/water v/v 90/10
Temperature:	30°C
Flow Rate:	0.5mL/min
Injection Volume:	2µL
Detection:	UV, 220nm
Analytes:	(100 ppm each) 1. Retinol acetate (vitamin A acetate) 2. Vitamin D2 3. Vitamin D3 4. delta-Tocopherol 5. gamma-Tocopherol 6. alpha-Tocopherol (vitamin E) 7. Impurity (unknown) 8. Vitamin E acetate 9. Vitamin K2 10. Vitamin K1

Acclaim Phenyl-1

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	Guard Cartridge	10	-	071974	071973
	HPLC Column	150	071971	071970	071969
5	HPLC Column	250	-	-	079697

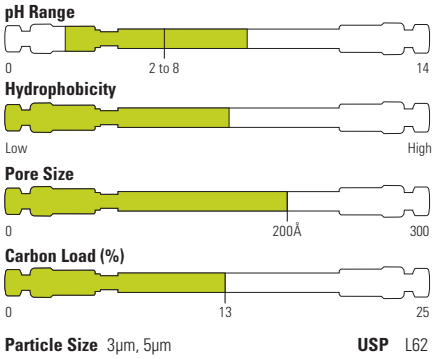
Learn more at **thermofisher.com/acclaim**

Acclaim C30

Columns for separating structurally related isomers

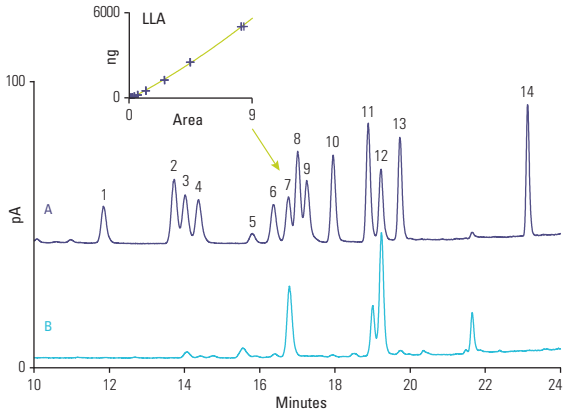
- High shape selectivity
- Unique selectivity complementary to other reversed-phase columns
- Compatibility with highly aqueous mobile phase
- High-quality: low column bleed, high efficiency and rugged packing

The Acclaim C30 is designed to provide high shape selectivity for separating hydrophobic structural related isomers and unique selectivity complementary to other reversed-phase columns (e.g. C18).



Particle Size 3µm, 5µm **USP** L62

Omega fatty acids



Acclaim C30, 5µm, 150 x 4.6mm

Mobile Phase A:	Water:formic acid:mobile phase B 900:3.6:100 (v/v)		
Mobile Phase B:	Acetone:acetonitrile:THF:formic acid 675:225:100:4(v/v)		
Gradient:	Time (min)	%A	%B
	0	100	0
	1	40	60
	13	30	70
	22	5	95
	24	5	95
	29	100	0
	32	100	0
Temperature:	30°C		
Flow Rate:	1.00mL/min		
Injection Volume:	2µL		
Detection:	Corona ultra, nebulizer 15°C, filter high		
Analytes:	1. SDA 2. EPA 3. ALA 4. GLA 5. DHA 6. Arach. 7. LLA		
Samples:	A. Standards in isopropanol B. Saponified chicken fat		

Acclaim C30

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	HPLC Column	50	078666	078663	078661
		100	078665	078662	078660
		150	075725	075724	075723
		250	078664	075726	303056
5	Guard Cartridge	10	075722	075721	075720
	HPLC Column	150	-	-	075719
		250	-	-	075718

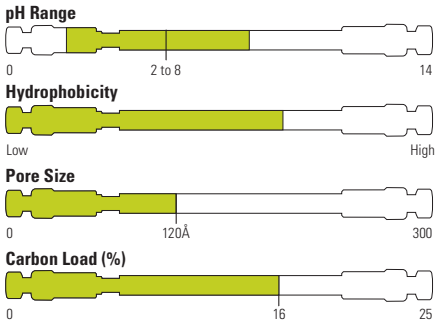
Acclaim guard holder

Format	Cat. No.
Acclaim Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and Coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim PolarAdvantage

Novel polar-embedded reversed-phase columns with unique selectivity

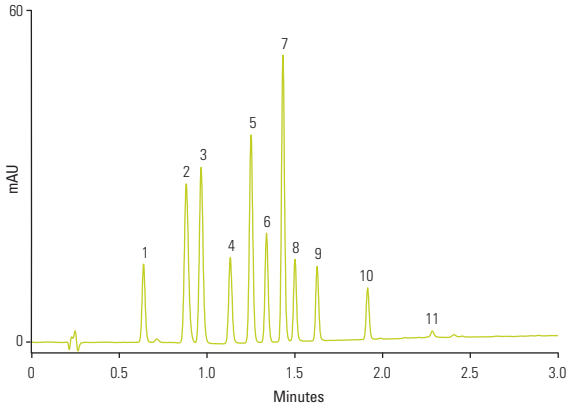
- Selectivity complementary to the C18 column
- Low silanol activity for excellent peak shape with basic compounds
- Compatible with 100% aqueous mobile phase
- High selectivity for hydrophobic aromatic molecules
- Wide range of applications



Particle Size 2.2µm, 3µm, 5µm **USP** L60

Acclaim PolarAdvantage (PA) columns feature a patented bonding column chemistry that incorporates a polar sulfonamide group with an ether linkage near the silica surface. This unique chemistry provides low silanol activity, compatibility with 100% aqueous mobile phase. The Acclaim PA column offers great separation power to resolve a wide variety of polar and non-polar analytes and supports LC-MS analysis.

EPA 604 Phenols



Acclaim RSLC PolarAdvantage, 2.2µm, 50 x 3.0mm

Mobile Phase A:	10mM formic acid + 10mM ammonium formate, pH 3.75 ± 0.05
Mobile Phase B:	Acetonitrile
Gradient:	-1.5 0.0 0.3 2.6 3.0 %A 70 70 70 10 10 %B 30 30 30 90 90
Temperature:	30°C
Flow Rate:	1.25mL/min
Injection Volume:	0.5µL
Detection:	UV, 280nm, 10Hz, 0.5s resp. time
Analytes:	1. Phenol 2. 2,4-Dinitrophenol 3. 4-Nitrophenol 4. 2-Chlorophenol 5. 2-Nitrophenol 6. 2,4-Dimethylphenol 7. 4,6-Dinitro-2-methylphenol 8. 4-Chloro-3-methylphenol 9. 2,4-Dichlorophenol 10. 2,4,6-Trichlorophenol 11. Pentachlorophenol
Sample:	Calibration mix, 50µg/mL in water

Acclaim PolarAdvantage

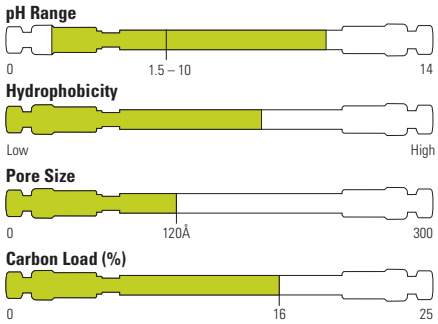
Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
2.2	RSLC Column	50	072622	-	-
		100	072623	072627	-
		150	072624	-	-
		250	074813	-	-
3	HPLC Column	50	063174	068972	-
		100	061316	076214	-
		150	061317	063693	061318
		250	-	070079	-
5	Guard Cartridge	10	069691	071983	069698
	HPLC Column	50	-	-	061319
		150	-	-	061320
		250	-	-	061321

Learn more at **thermofisher.com/acclaim**

Acclaim PolarAdvantage II

Complementary selectivity and enhanced hydrolytic stability

- Unique selectivity complementary to the C18 column
- Novel polar-embedded column chemistry for hydrolytic stability
- Compatible with 100% aqueous mobile phase
- Low bleed for MS compatibility
- Wide range of applications

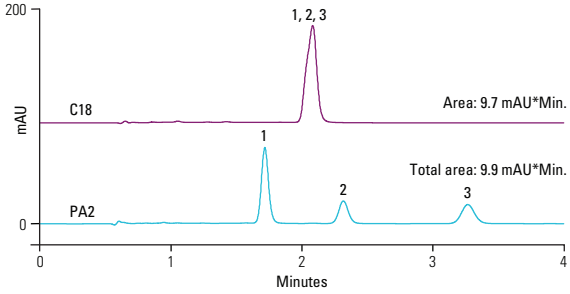


Particle Size 2.2µm, 3µm, 5µm **USP** L60

Acclaim PolarAdvantage II (PA2) columns feature a patented surface chemistry that incorporates an amide-embedded polar group and multi-point attachment between the ligands and the silica surface. This unique chemistry provides enhanced hydrolytic stability from pH 1.5-10 with 100% aqueous mobile phases and exhibits high reversed-phase capacity, with selectivity complementary to conventional C18 columns.

The Acclaim PA2 column is specifically designed to withstand high pH conditions, making it a good choice for the separation of both basic and acidic analytes.

Turmeric



Acclaim RSLC 120 C18 2.2µm, 100 x 2.1mm
Acclaim RSLC PA2, 2.2µm, 100 x 2.1mm

Mobile Phase A:	15mM H_3PO_4
Mobile Phase B:	Methanol
Isocratic:	C18: 70% B (v/v) PA2: 80% B (v/v)
Temperature:	30°C
Flow Rate:	0.41mL/min
Detection:	UV, 428nm
Analytes:	1. Curcumin 2. Demethoxycurcumin 3. Bis-demethoxycurcumin
Sample:	Turmeric extract

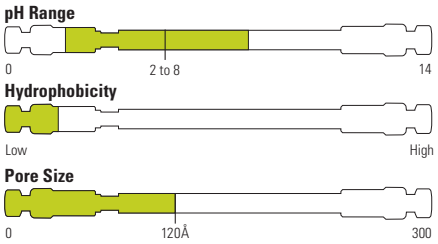
Acclaim PolarAdvantage II

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
2.2	RSLC Column	30	071402	-	-
		50	068989	071608	-
		100	068990	071607	-
		150	071401	-	-
		250	074814	-	-
3	HPLC Column	33	-	066276	-
		50	077999	068973	063189
		75	-	066277	-
		100	077998	078000	078001
		150	063187	063705	063191
		250	077997	070080	-
5	Guard Cartridge	10	069692	071985	069699
	HPLC Column	150	-	-	063197
		250	-	-	063199

Acclaim HILIC-10

Designed with unique selectivity for hydrophilic molecules

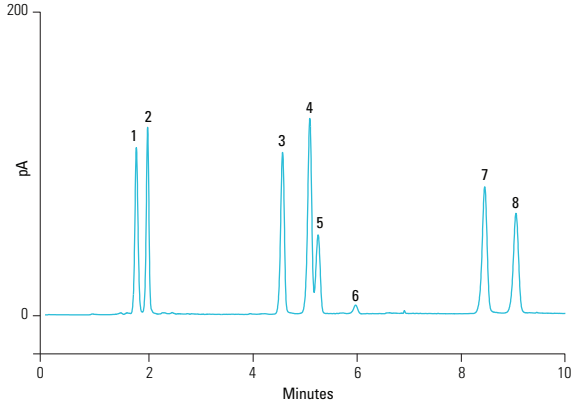
- Retains highly polar molecules that are not retained by reversed-phase chromatography
- Unique selectivity, complementary to reversed-phase columns
- Hydrolytically stable
- Rugged column packing
- Broad application range



Particle Size 3µm, 5µm

The Acclaim HILIC-10 column is designed for separating highly hydrophilic molecules by Hydrophilic Interaction Liquid Chromatography (HILIC). This column is based on high-purity spherical porous silica covalently modified with a proprietary hydrophilic layer.

Glycerides



Acclaim HILIC-10, 3µm, 150 x 3.0mm

Mobile Phase A:	Heptane
Mobile Phase B:	2-Propanol/acetic acid 99.5:0.5
Temperature:	25°C
Flow Rate:	0.50mL/min
Injection Volume:	4µL
Detection:	Corona ultra, nebulizer 15°C
Analytes:	1. Tristearin 2. Trilaurin 3. Distearin isomer 1 4. Dilaurin isomer 1 5. Distearin isomer 2 6. Dilaurin isomer 2 7. Monostearin 8. Monolaurin

Acclaim HILIC-10

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	HPLC Column	150	074259	074258	074257
5	Guard Cartridge	10	074263	074261	074262

Acclaim guard holder

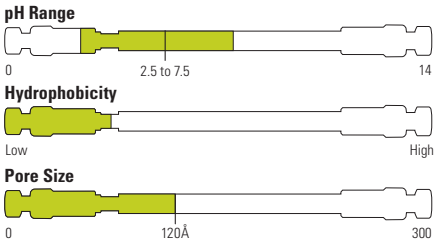
Format	Cat. No.
Acclaim Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and Coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Learn more at **thermofisher.com/acclaim**

Acclaim Mixed-Mode HILIC-1

Uniquely designed for both reversed-phase and HILIC operations

- Can operate in both RP and HILIC modes
- Retains highly polar molecules
- Unique selectivity complementary to RP columns
- Broader application range compared with conventional diol-based columns
- High-efficiency column for high-resolution separations

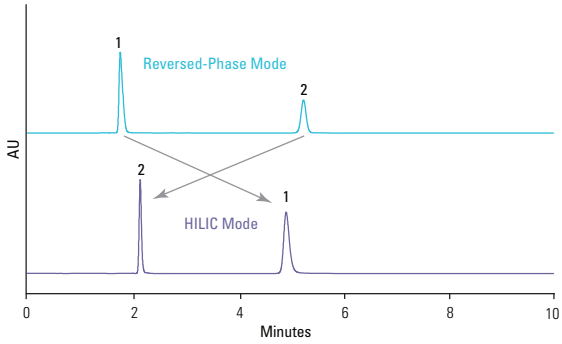


Particle Size 3µm, 5µm

The Acclaim Mixed-Mode HILIC-1 column features a unique, high-efficiency, silica-based HPLC mixed-mode stationary phase that combines both reversed-phase (RP) and hydrophilic interaction liquid chromatography (HILIC) properties. This combination allows both hydrophobic and hydrophilic interactions to be utilized to optimize separations.

The functional group is of a hydrophobic alkyl chain with a diol group at the terminus. This unique combination results in the adjustable selectivity, making Acclaim Mixed-Mode HILIC-1 separate mixtures that would be impossible for a C18 column. This column is suitable for a broad range of applications, including non-ionic ethoxylated surfactants, drug metabolites, lipids, polyethylene glycols (PEGs), ethoxylated surfactants, and more.

Cytosine and naphthalene



Acclaim Mixed-Mode HILIC-1, 5µm, 150 x 4.6mm

Mobile Phase:	CH_3CN/0.1 M NH_4OAc, pH 5.2 v/v 52/48 for RP mode v/v 92/8 for HILIC mode
Temperature:	30°C
Flow Rate:	1mL/min
Injection Volume:	10µL
Detection:	UV, 254nm
Analytes:	1. Cytosine (100 ppm) 2. Naphthalene (100 ppm)

Acclaim Mixed-Mode HILIC-1

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	HPLC Column	50	-	071912	-
		150	070091	070090	-
5	Guard Cartridge	10	069694	071913	069706
	HPLC Column	150	066847	-	066843
		250	-	-	066844

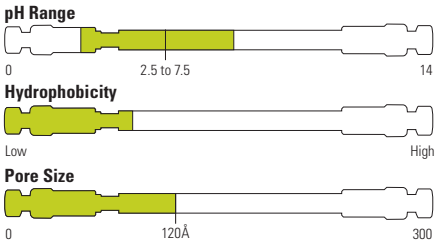
Acclaim guard holder

Format	Cat. No.
Acclaim Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and Coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim Mixed-Mode WAX-1

Designed for separating anionic molecules with powerful adjustable selectivity control

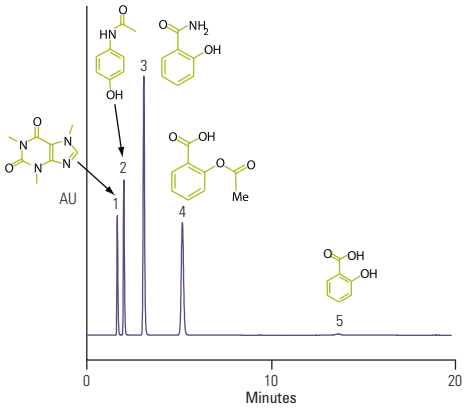
- Adjustable selectivity
- Selectivity orthogonal to reversed-phase (RP) columns
- Ideal selectivity for anionic molecules
- Excellent column efficiency and peak asymmetry
- Multimode retention mechanisms: reversed-phase, weak anion exchange, and HILIC modes



Particle Size 3µm, 5µm **USP** L78

The Acclaim Mixed-Mode WAX-1 is a novel, high-efficiency silica HPLC column that combines hydrophobic and weak anion exchange characteristics. Its unique chemistry results in a multimode separation mechanism that includes reversed-phase, anion exchange, and HILIC interactions. Selectivity can be adjusted by changing ionic strength, pH or organic solvent content.

Pain relief medicine



Acclaim Mixed-Mode WAX-1, 5µm, 150 x 4.6mm

Mobile Phase:	40/60 v/v Acetonitrile/buffer (6.8 g potassium monophosphate and 0.5 g pyrophosphate in 1000 g D.I. H_2O, pH is adjusted to 6.0 with NaOH)
Temperature:	30°C
Flow Rate:	1mL/min
Injection Volume:	1µL
Detection:	UV, 220nm
Analytes:	1. Caffeine
	2. Acetaminophen
	3. Salicylamide
	4. Acetyl salicylic acid (Aspirin)
	5. Salicylic acid

Acclaim Mixed-Mode WAX-1

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	HPLC Column	50	-	071908	-
		150	070089	070088	-
5	Guard Cartridge	10	069686	071909	069704
	HPLC Column	150	067084	-	064984
		250	-	-	064985

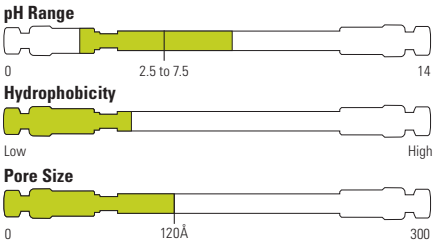
Acclaim guard holder

Format	Cat. No.
Acclaim Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and Coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim Mixed-Mode WCX-1

Designed for separating cationic molecules with adjustable selectivity control

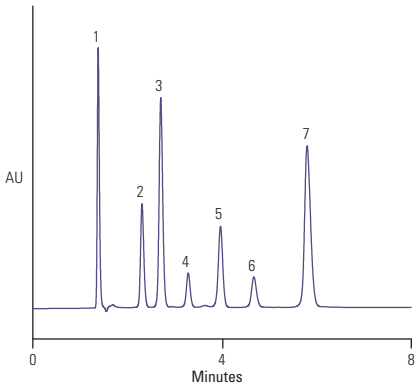
- Adjustable selectivity
- Ideal selectivity for separating basic molecules
- Selectivity complementary to C18 RP columns
- Multimode separation mechanism: reversed-phase, weak cation exchange, anion-exclusion and HILIC



Particle Size 3µm, 5µm **USP** L78

The Acclaim Mixed-Mode WCX-1 is a novel, high-efficiency, silica-based column, with a proprietary ligand with both hydrophobic and weak cation exchange properties. Selectivity of ionizable and neutral compounds can be controlled independently or simultaneously by tuning mobile phase ionic strength, pH or organic modifier. This column therefore can separate using multiple separation modes: reversed-phase, cation exchange, and normal-phase/HILIC and is recommended for a variety of industrial applications, including pharmaceutical, chemical, consumer products, foods and beverages.

Pharmaceutical counterions



Acclaim Mixed-Mode WCX-1, 5µm, 150 x 4.6mm

Mobile Phase:	40/60 v/v CH_3CN/NH_4OAc, pH 5.2 (20 mM total)
Temperature:	30°C
Flow Rate:	1mL/min
Injection Volume:	5µL
Detection:	UV (225 nm)
Analytes:	1. Maleate 50µg/mL
	2. Ketoprofen 30µg/mL
	3. Naproxen 30µg/mL
	4. Hydrocortisone 60µg/mL
	5. Dexamethasone 60µg/mL
	6. Oxprenolol 300µg/mL
	7. Timolol 250µg/mL

Acclaim Mixed-Mode WCX-1

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	HPLC Column	50	-	071910	-
		150	070093	070092	-
5	Guard Cartridge	10	085455	071911	069705
	HPLC Column	150	068371	-	068353
		250	-	-	068352

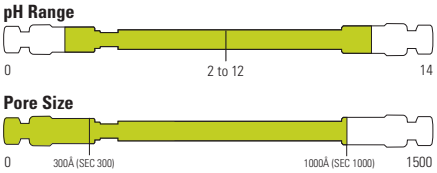
Acclaim guard holder

Format	Cat. No.
Acclaim Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and Coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim Size Exclusion Chromatography (SEC)

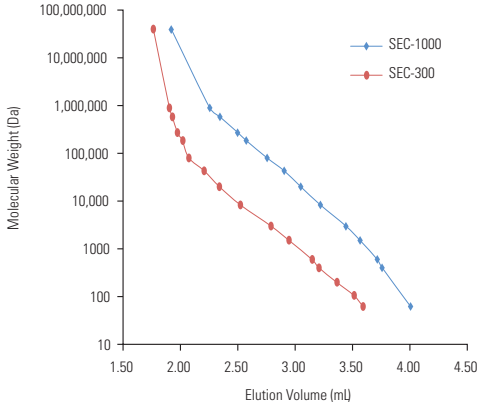
High performance SEC columns for analysis of water soluble polymers

- Proprietary mono-dispersed multi-pore hydrophilic resin: no inflection points in calibration curve
- SEC-300 calibrated from 100 to 50,000 Daltons
- SEC-1000 calibrated from 1,000 to 1,000,000 Daltons
- Availability of small particle sizes packed in 300 x 4.6mm dimension allows for high-resolution analysis at reduced solvent consumption
- Stable surface bonding with low column bleed and compatibility with UV, RI, MS, ELSD and Thermo Scientific™ Dionex™ Corona™ Charged Aerosol Detectors



Particle Size 5, 7µm

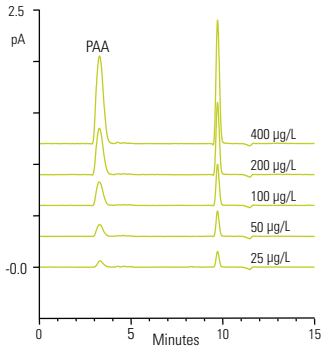
Thermo Scientific™ Acclaim™ SEC-300 and SEC-1000 are a family of resin based, high performance size exclusion chromatography columns specifically designed for the separation of water soluble polymers and oligomers.

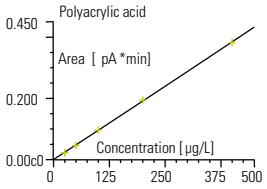


Acclaim SEC-300, 5µm, 300 x 4.6mm
Acclaim SEC-1000, 7µm, 300 x 4.6mm

Mobile Phase:	10mM sodium perchlorate
Temperature:	25°C
Flow Rate:	0.35mL/min
Injection Volume:	50µL
Detection:	RI
Analytes:	(0.03% - 0.1% in mobile phase) dextran (MW 5,000,000-40,000,000), PEO (MW 895,000, 580,000, 272,000, 185,000, 80,000, 43,000, and 20,000), PEG (MW 8,300, 3,000, 1,500, 600, 400 and 200), diethylene glycol (MW 106 and ethylene glycol (MW 62)

Polyacrylic acid using SEC with charged-aerosol detection





Acclaim SEC-300 , 5µm, 300 x 4.6mm

Mobile Phase A:	Acetonitrile
Mobile Phase B:	Water
Temperature:	30°C
Flow Rate:	0.35mL/min
Injection Volume:	35µL
Detection:	Corona III; evaporator 55°C, Engine 40 °C, 2 Hz, filter 5, power function 1.20
Analytes:	1. PAA standards in water

Acclaim size exclusion chromatography (SEC)

Description	Particle Size (µm)	Format	Length (mm)	4.6mm ID	7.8mm ID
Acclaim SEC-300	5	Guard	33	082740	–
		HPLC Column	150	–	079726
			300	079723	079725
Acclaim SEC-1000	7	Guard	33	082739	–
		HPLC Column	150	–	079722
			300	079724	079721

Application Specific HPLC and UHPLC Columns

Innovative chemistries tailored for challenging and critically important applications

Application specific columns utilize novel and unique chemistries to provide superior resolution with ease of use for key pharmaceutical and environmental applications.

Acclaim AmG C18
- Aminoglycoside antibiotics separation

Acclaim Trinity P1 and P2
- API & counterion analysis

Acclaim organic acid
- Fast organic acid analysis

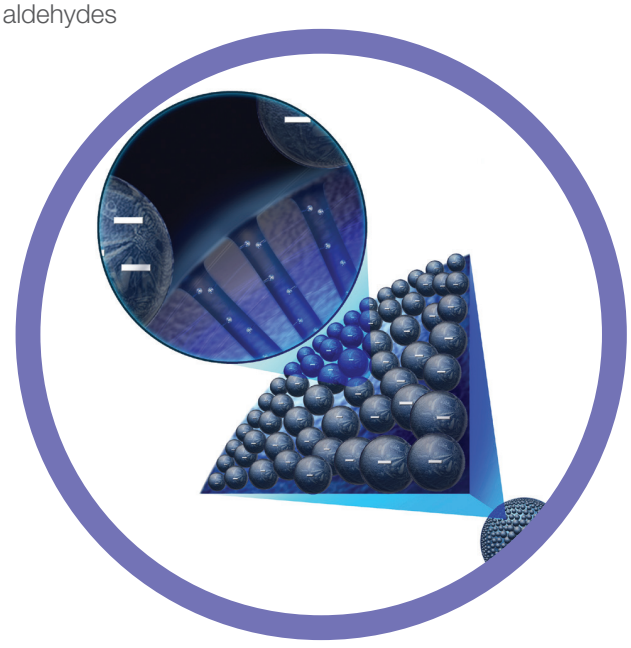
Acclaim surfactant and surfactant plus
- Separation of surfactants

Acclaim explosives
- Separation of explosive residues

Acclaim Trinity Q1
- Diquat and paraquat analysis

Acclaim Carbamate
- The separation of carbamate pesticides

Acclaim Carbonyl C18
- Separation of DNPH derivatives of aldehydes and ketones



Download the Acclaim column selection guide **here**

For more information, visit **thermofisher.com/acclaim**

Acclaim AmG C18

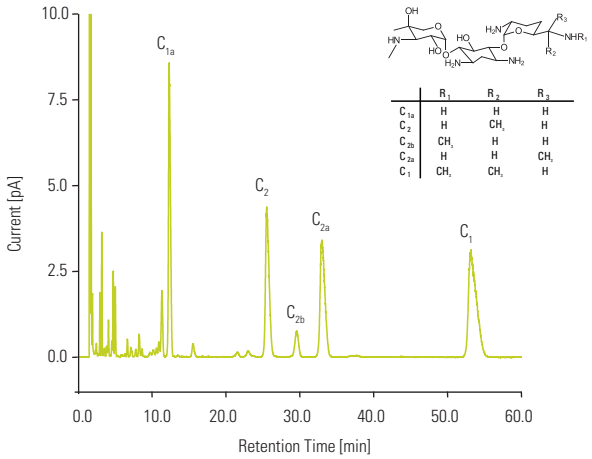
Designed to provide rugged and reproducible reversed-phase chromatography of aminoglycoside antibiotics.

- Rugged and reproducible
- Excellent selectivity for the HPLC of aminoglycosides
- Superior resistance to acidic conditions for long column lifetime
- Easy to use with only aqueous mobile phase; TFA only, or TFA/HFBA or PFPA is needed
- Compatible with simple rugged methods; no solvents are required
- High efficiency and throughput

Aminoglycoside antibiotics are commonly used as clinical and veterinary medicines to treat bacterial infections. HPLC using ion-pairing reversed-phase separations is an effective technique for simultaneous qualitative and quantitative determination of aminoglycosides.

The Acclaim AmG C18 column is designed to provide excellent stability, selectivity and high resolution. It has a unique surface, a polymer encapsulated silica covalently bonded with a C18 ligand. This ensures ultra-stability when exposure to low pH (<1) and high temperature separation conditions.

Isocratic separation of gentamicin sulfate using 100 mM TFA as the mobile phase



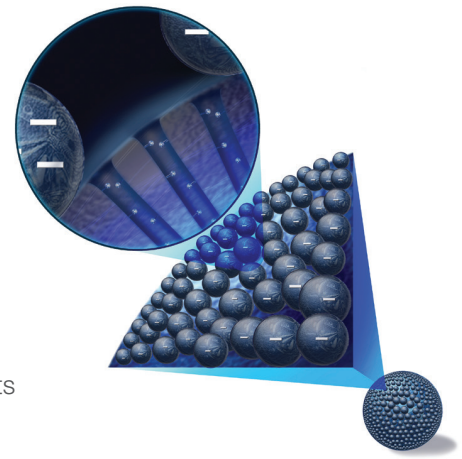
Acclaim AmG C18, 3µm, 150 x 3.0mm

Mobile Phase:	100 mM TFA
Temperature:	30°C
Flow Rate:	0.425 mL/min
Injection Volume:	2µL
Detection:	Corona Veo RS (Filter = 5.0 s; Evaporation Temp = 35 °C; Data Rate = 5 Hz; Power Function = 1.00)
Sample:	Gentamicin (1 mg/mL)

Acclaim AmG C18

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	Guard Cartridges (2/pk)	10	088754	088756	088758
	HPLC Column	150	088753	088755	088757
Guard Cartridge Holder			069580	069580	069580

Acclaim Trinity P1



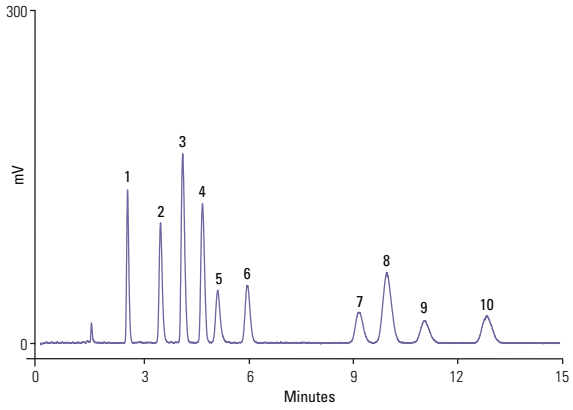
Mixed mode column technology combining reversed-phase, anion exchange and cation exchange functionality on a single support

- Ideal selectivity for simultaneous separation of API and counterion
- Adjustable selectivity by mobile phase ionic strength, electrolyte type, pH, and organic solvent
- Low bleed; compatible with MS, CAD and ELSD
- Retention of hydrophilic ionic and ionizable analytes without ion-pairing reagents
- Greater flexibility in method development: each retention mechanisms can be controlled independently

The Thermo Scientific™ Acclaim™ Trinity™ P1 HPLC column is designed with Nanopolymer Silica Hybrid (NSH) technology, which results in a multimode surface chemistry ideal for the simultaneous separation of drugs and their counterions. The surface chemistry concurrently provides reversed-phase, cation exchange, and anion exchange functionalities. The result is maximum flexibility in method development. Separations can be optimized easily by adjusting the chromatographic parameters (mobile phase pH, ionic strength, and organic strength).

Download the Acclaim column selection guide **here**

Simultaneous separation of pharmaceutical counterions



Acclaim Trinity P1, 3µm, 100 x 3.0mm

Mobile Phase:	60/40 v/v CH_3CN/20mM (total) NH_4OAc, pH 5
Temperature:	30°C
Flow Rate:	0.5mL/min
Injection Volume:	2µL
Detection:	Corona ultra (Gain = 100 pA; Filter = med; Neb Temp = 30°C)
Analytes: (50 to 100ppm)	1. Choline 2. Tromethamine 3. Sodium 4. Potassium 5. Meglumine 6. Mesylate 7. Nitrate 8. Chloride 9. Bromide 10. Iodide

Acclaim Trinity P1

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID
3	Guard Cartridges (2/pk)	10	071391	071390
	HPLC Column	50	075565	071388
		100	071389	071387
		150	075564	075563

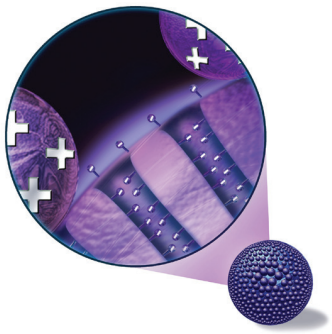
Acclaim guard holder

Format	Cat. No.
Acclaim SST Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

For more information, visit **thermofisher.com/acclaim**

Acclaim Trinity P2

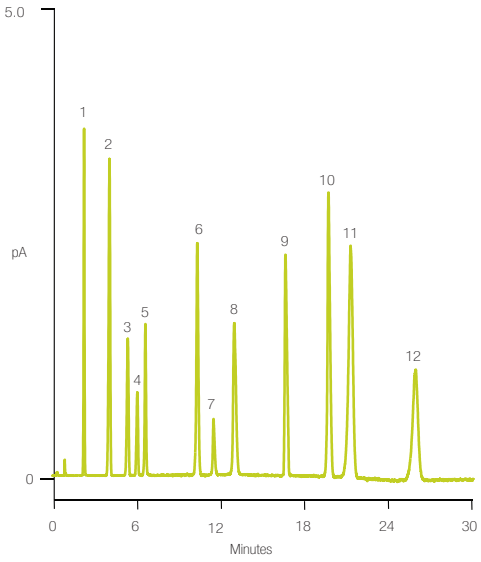
Mixed-mode column technology; hydrophilic interaction combining HILIC, anion exchange and cation exchange functionalities



- Ideal for separating pharmaceutical counterions, including monovalent and divalent cations or anions
- Selectivity complementary to the Trinity P1 column
- Low column bleed, compatible with CAD and MS
- Hydrolytically stable
- High efficiency

The Acclaim Trinity P2 is a unique, high-efficiency, silica-based column specifically designed for separation of pharmaceutical counterions, including monovalent and divalent cations or anions. This column is based on Nanopolymer Silica Hybrid (NSH) technology, which consists of high-purity porous spherical silica particles coated with charged nanopolymer particles. The inner-pore area of the silica bead is modified with a covalently bonded organic layer that provides cation-exchange retention, while the outer surface is modified with anion-exchange nano-polymer beads.
Acclaim Trinity P2 column is aimed to complement Acclaim Trinity P1 to provide a total solution for pharmaceutical counter ion analysis by HPLC.

Pharmaceutical-related anions and cations



Acclaim Trinity P2, 3µm, 100 x 3.0mm

Mobile Phase:	D.I. water and 100 mM NH4OFm, pH 3.65 gradient
Temperature:	30°C
Flow Rate:	0.60 mL/min
Injection Volume:	2µL
Detection: Detector	Corona Veo Charged Aerosol
Analytes:	1. Phosphate 2. Sodium 3. Potassium 4. Chloride 5. Malate 6. Bromide 7. Nitrate 8. Citrate 9. Fumarate 10. Sulfate 11. Magnesium 12. Calcium
Samples: water	0.02 – 0.10 mg/mL each in D.I.

Time (min)	H_2O	0.1 M Ammonium formate, pH3.65
-10	0.760	1.474
0	80	20
2	80	20
22	0	100
30	0	100

Acclaim Trinity P2

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID
3	Guard Cartridges (2/pk)	10	085435	085436
	HPLC Column	50	085431	085433
		100	085432	085434

Acclaim guard holder

Format	Cat. No.
Acclaim Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim organic acid

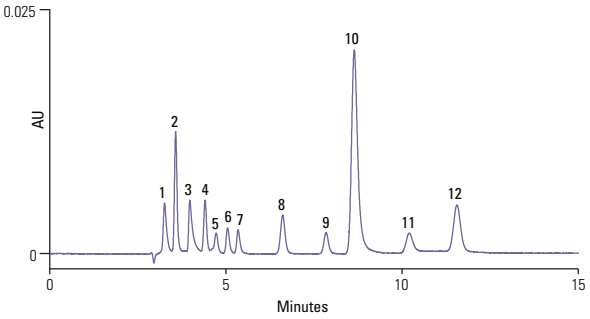
Optimized and application-tested for the analysis of hydrophilic organic acids

- Tested to guarantee consistent hydrophilic organic acid separations
- Compatible with 100% aqueous mobile phases
- Hydrolytic stability at low-pH conditions
- Ideal selectivity for separating a wide spectrum of organic acids
- Excellent column efficiency and peak shapes for organic acids

The Acclaim Organic Acid (OA) is a silica-based reversed-phase column designed for high-efficiency, high-throughput organic acids analysis. It offers unparalleled performance for separating hydroxyl aliphatic and aromatic organic acids.

The Acclaim OA is the recommended column for determining small hydrophilic organic acids, C1 to C7 aliphatic acids, and hydrophilic aromatic acid and is also valuable for the analysis and quality assurance of food and beverage products, pharmaceutical preparations, plating baths, and manufacturing chemicals, chemical intermediates, and environmental samples.

Hydrophilic organic acids



Acclaim Organic Acid, 5µm, 4 × 250mm

Mobile Phase:	100mM Na_2SO_4, pH 2.65 (adjusted with methanesulfonic acid)
Temperature:	30°C
Flow Rate:	0.6mL/min
Injection Volume:	5µL
Detection:	UV, 210nm
Analytes:	1. Oxalic acid 15mg/L (ppm) 2. Tartaric acid 120 3. Formic acid 180 4. Malic acid 120 5. iso-Citric acid 120 6. Lactic acid 180 7. Acetic acid 120 8. Citric acid 120 9. Succinic acid 120 10. Fumaric acid 7 11. cis-Aconitic acid * 12. trans-Aconitic acid *

* 7ppm total for cis and trans isomers

Download the Acclaim column selection guide **here**

Acclaim organic acid

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.0mm ID
3	HPLC Column	150	070087	070086	–
5	Guard Cartridges (2/pk)	10	–	071987	069700
	HPLC Column	150	–	–	062903
		250	–	–	062902

Acclaim guard holder

Format	Cat. No.
Acclaim SST Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

For more information, visit **thermofisher.com/acclaim**

Acclaim surfactant

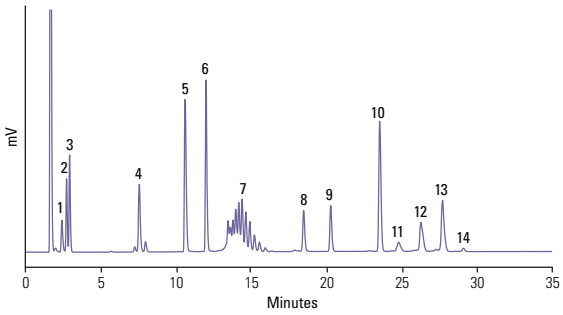
Excellent performance for separating a broad range of surfactants

- Ideal selectivity for separation of anionic, nonionic, cationic and amphoteric surfactants
- Excellent peak shapes, especially for cationic surfactants
- Compatible with highly aqueous mobile phases
- Improved resolution for ethoxylated surfactants
- Rugged separations under a variety of conditions

The Acclaim Surfactant columns are the first generation high-efficiency, silica-based columns designed specifically for separating a wide variety of surfactants, including anionic, cationic, nonionic, ethoxylated and amphoteric surfactants using UV, ELSD or RI detection.

Surfactants are widely used in industrial, agricultural, and pharmaceutical markets, in products as diverse as pesticides, detergent powders, petroleum products, cosmetics, and pharmaceuticals. The Acclaim Surfactant column was designed specifically for HPLC separation of these surfactants.

Inorganic anion, hydrotropes, cationic, nonionic, amphoteric, and anionic surfactants



Acclaim Surfactant, 5µm, 150 x 4.6mm

Mobile Phase A:	CH_3CN,
Mobile Phase B:	0.1 M NH_4OAc, pH 5.4
Gradient:	25% to 85% A in 25min, then hold 85% A for 10min
Temperature:	30°C
Flow Rate:	1mL/min
Injection Volume:	25µL
Detection:	ELS detector
Analytes:	1. Chloride 2. Bromide 3. Nitrate 4. Xylene sulfonate 5. Laurylpyridinium chloride 6. Lauryldimethylbenzyl-ammonium chloride 7. Triton X-100 8. Cetyl betaine 9. Decyl sulfate 10. Dodecyl sulfate 11. C_{10}-LAS 12. C_{11}-LAS 13. C_{12}-LAS 14. C_{13}-LAS

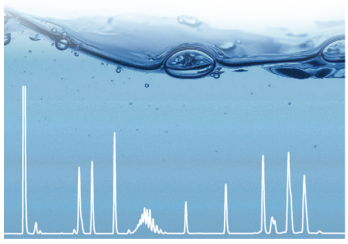
Acclaim surfactant

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
3	HPLC Column	150	070085	070084	–
5	Guard Cartridges (2/pk)	10	069693	071991	069701
	HPLC Column	150	068123	–	063201
		250	–	–	063203

Acclaim guard holder

Description	Cat. No.
Acclaim SST Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim surfactant plus



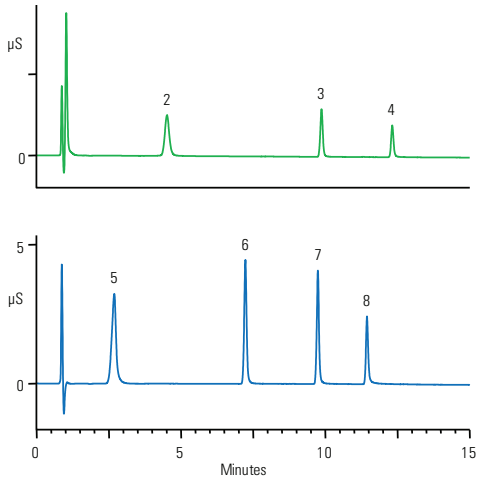
Column of choice for surfactant analysis using higher sensitivity detection: performance, versatility, throughput

- Ideal selectivity for simultaneous separation of anionic, nonionic, cationic, and amphoteric surfactants
- Compatible with multiple detectors including MS, CAD, ELSD and UV
- Well suited for the determination of cationic surfactants
- High efficiency and fast analysis
- Rugged separations under a variety of conditions

Acclaim Surfactant Plus is a new generation of columns offering improved performance and higher throughput for analyzing surfactants. These columns exhibit exceptionally low bleed and are ideal for use with charged aerosol detectors (CAD) and mass spectrometers (MS). These columns can be used to separate a wide variety of surfactants including anionic, cationic, nonionic and amphoteric surfactants, as well as isomers of xylene sulfonate.

These columns can be used with evaporative light scattering detectors (ELSD), suppressed conductivity detectors (SCD), and UV-Vis detectors (UV). Non-metallic PEEK hardware is available for best compatibility with Dionex ion chromatography systems.

Cationic surfactants



Acclaim Surfactant Plus, 3µm, 150 x 3.0mm

Mobile Phase A: Acetonitrile
Mobile Phase B: 100mM Formic acid
Mobile Phase C: Water
Gradient:

Time (min)	%A	%B	%C
-12	5	5	90
0	5	5	90
12	40	5	55
20	40	5	55

Temperature: 25°C
Flow Rate: 0.5mL/min
Injection Volume: 5µL
Detection: Conductivity with blank subtraction
Analytes:
1. Tetrabutylammonium
2. Tetrapentylammonium
3. Tetrahexylammonium
4. Tetraheptylammonium
5. Decyl-trimethylammonium
6. Dodecyl-trimethylammonium
7. Tetradecyl-trimethylammonium
8. Hexadecyl-trimethylammonium

Acclaim Surfactant Plus

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID	4.0mm ID PEEK
3	HPLC Column	100	078955	078952	–	–
		150	078954	078951	078950	–
		250	078953	–	–	–
5	Guard Cartridges (2/pk)	10	078960	078959	082773	–
	HPLC Column	250	–	–	082767	–
		150	–	–	082768	078956

Acclaim guard holder

Description	Cat. No.
Acclaim SST Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim explosives E2

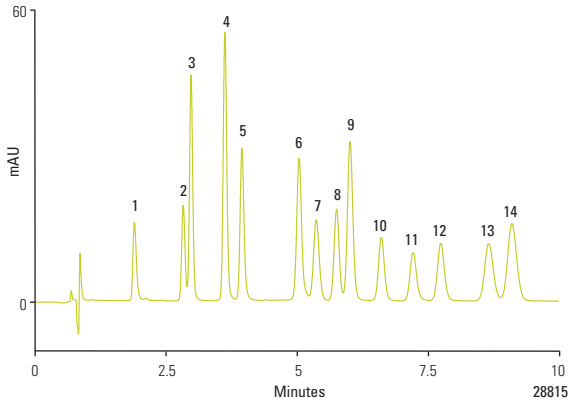
The best solution for explosives analysis (EPA Method 8330)

- Acclaim E2 columns provide baseline resolution of all 14 compounds targeted by EPA Method 8330
- Columns available in 2.2, 3 and 5µm particle size
- Simple isocratic elution conditions
- Rugged columns with good lot-to-lot reproducibility

Acclaim Explosives E2 columns are specifically designed to resolve all 14 explosives listed in EPA SW-846 Method 8330: Nitroaromatics and Nitramines by HPLC. The novel and unique chemistries of these columns provide superior resolution with complementary selectivities.

The Acclaim Explosives E2 may be used as either a primary or a confirmatory column. The unique selectivity and versatility of this column provides a wider application range, including the analysis of explosives beyond U.S. EPA Method 8330 (ISO22478).

Rapid determination of EPA 8330A explosives



Acclaim RSLC Explosives E2, 2.2µm, 100 x 2.1mm

Mobile Phase:	Methanol:water 48:52 (v/v)	
Temperature:	31°C	
Flow Rate:	0.34mL/min (293 bar)	
Injection Volume:	1µL	
Detection:	UV, 254nm	
Analytes:	1. HMX	8. 2,6-DNT
	2. RDX	9. 2,4-DNT
	3. 1,3,5-TNB	10. 2-NT
	4. 3,5-DNB	11. 4-NT
	5. NB	12. 3-NT
	6. 2,4,6-TNT	13. 4-Am-2,6-DNT
	7. Tetryl	14. 2-Am-4,6-DNT
Sample:	Calibration mix, 25µg/mL in 50% acetontrile	

Acclaim Explosives E2

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
2.2	RSLC Column	100	076225	076227	–
		150	076226	–	–
3	HPLC Column	150	070083	070082	–
		250	–	070081	–
5	Guard Cartridges (2/pk)	10	–	071989	069703
	HPLC Column	250	–	–	064309

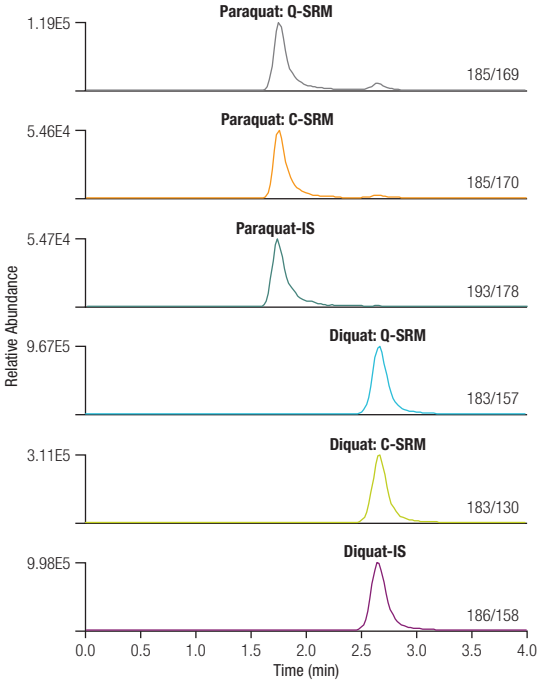
Acclaim Trinity Q1

For trace analysis of diquat and paraquat

- Excellent resolution of diquat and paraquat
- Good peak shape
- Fast analysis
- LC-MS compatible
- No ion-pairing reagent needed

Acclaim Trinity Q1 columns are unique, high-efficiency, silica-based columns designed for the separation of the herbicides diquat and paraquat. These herbicides are toxic and residues are monitored in drinking water, wastewater and agricultural products. The Acclaim Trinity Q1 column is a tri-mode (WCX, WAX, RP), column based on Nano-polymer Silica Hybrid technology. It offers unmatched high-resolution and high-throughput trace analysis of the herbicides diquat and paraquat by LC-MS/MS and LC-UV methods.

Diquat and Paraquat



Acclaim Trinity Q1, 3µm, 50 x 3.0mm

Mobile Phase:	25% ammonium acetate (100mM, pH 5.0); 75% acetonitrile
Temperature:	Ambient
Flow Rate:	0.5mL/min
Injection Volume:	5µL
Detection:	Show Mass Spectrometric conditions and the scan events etc. table underneath are the peaks section
Mass Spectrometric Conditions System:	Thermo Scientific TSQ Quantiva Access MAX Quadrupole Mass Spectrometer
Interface:	Heated Electrospary Ionization with HESI II probe
Spray Voltage:	1500 V
Vaporizer Temp:	400 °C
Sheath Gas Pressure:	70
Aux Gas Pressure:	10
Capillary Temp:	350 °C
Quantitation Mode: (SRM)	Selected Reaction Monitoring

Scan Events	Precursor	Quantitative SRM (CID)	Confirmative SRM (CID)
Paraquat	185	169 (27)	170 (17)
Paraquat-d_6	193	178 (17)	
Diquat	183	157 (22)	130 (31)
Diquat-d_3	186	158 (22)	

Download the Acclaim column selection guide **here**

Acclaim Trinity Q1

Particle Size		Length (mm)	2.1mm ID	3.0mm ID
3	HPLC Column	50	083242	083241
		100	079717	079715
5	Guard Cartridges (2/pk)	10	083244	079719

For more information, visit **thermofisher.com/acclaim**

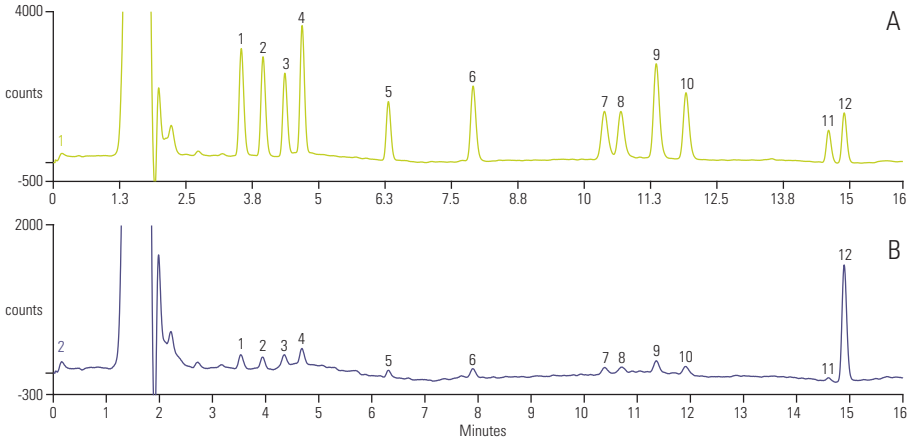
Acclaim Carbamate

Designed for baseline separation of carbamate pesticides specified in US EPA Method 531.2

- Baseline separation of carbamate pesticides specified in US EPA Method 531.2
- Use with either LC/postcolumn derivatization/fluorescence or LC-MS detection
- Available in 2.2, 3 and 5µm particle size
- Compatible with both binary (methanol/water) and ternary (acetonitrile/methanol/water) mobile phase gradients
- High-efficiency, extremely low column bleed, and rugged column packing

Acclaim Carbamate columns are designed for baseline separation of carbamates (N-methylcarbamate and N-methylcarbamoyloxime pesticides) specified in US EPA Method 531.2. Carbamate pesticides are widely used throughout the world. Drinking water and raw surface water is monitored for the presence of carbamate pesticides and related compounds using an established EPA Method 531.2 that uses HPLC with postcolumn derivatization. LC-MS is the method of choice for the ultimate sensitivity.

Carbamate standard - spiked rice samples



A: without dispersive SPE
B: with dispersive SPE using PSA

Acclaim Carbamate, 3µm, 150 x 3.0mm

Mobile Phase:	Methanol–H_2O
Gradient:	Methanol, -4.0–0.0 min, 14%;
	2.0 min, 20%; 8.0 min, 40%;
	13.6–16 min, 70%
Temperature:	50 °C
Flow Rate:	0.9mL/min
Injection Volume:	250µL
Detection:	Excitation/330nm and Emission/465nm
Analytes:	1. Aldicarb sulfoxide
	2. Aldicarb sulfone
	3. Oxamyl
	4. Methomyl
	5. 3-Hydroxy carbofuran
	6. Aldicarb
	7. Propoxur
	8. Carbofuran
	9. Carbaryl
	10. 1-Naphthol
	11. Methiocarb
	12. BDMC (I.S.)

Acclaim carbamate

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
2.2	RSLC Column	100	075597	–	–
		150	075596	–	–
3	Guard Cartridges (2/pk)	10	072930	072929	072928
	HPLC Column	150	072927	072926	072925
5	HPLC Column	250	–	–	072924

Acclaim guard holder

Description	Cat. No.
Acclaim SST Guard Cartridge Holder V-2	069580
Acclaim Guard Kit (Holder and coupler) V-2	069707
Guard to Analytical Column Coupler V-2	074188

Acclaim Carbonyl C18

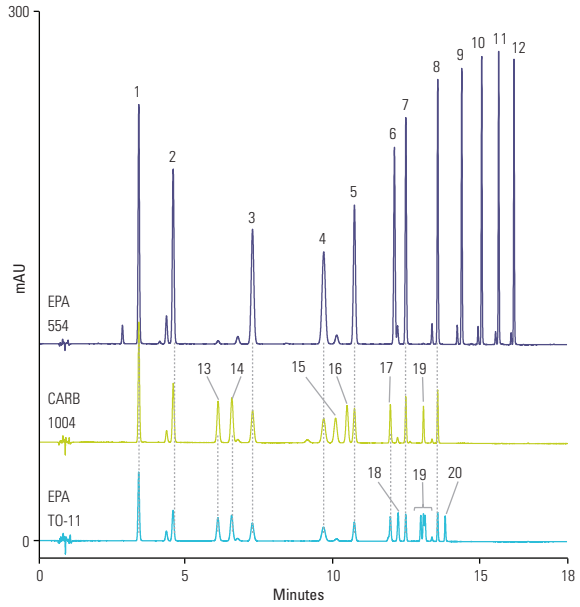
A silica-based, reversed-phase column designed specifically for separating DNPH derivatives of aldehydes and ketones

- Ideal selectivity for baseline resolution of DNPH derivatives of aldehydes and ketones regulated by various official methods, including EPA 554, EPA 8315, EPA 1667, EPA TO-11, and CARB 1004
- High efficiency for UHPLC performance
- Rugged columns with good lot-to-lot reproducibility
- Proven robust methods

Acclaim Carbonyl C18 columns are silica-based reversed phase columns designed specifically for separating DNPH derivatives of aldehydes and ketones. They exhibit superior resolution compared with other commercially available columns.

Aldehydes and ketones are common pollutants in air and water. Several standard methods have been developed to apply using dinitrophenylhydrazine (DNPH) to various environmental situations to measure these compounds. Some of the better known ones include CARB 1004 for vehicle exhaust, EPA 554 for drinking water, EPA 1667 for pharmaceutical wastewater, and EPA 8315 for general wastewater.

DNPH aldehydes and ketones



Acclaim Carbonyl RSLC, 2.2µm, 150 x 2.1mm

Mobile Phase A:	D.I. water
Mobile Phase B:	Acetonitrile
Gradient (min):	-4.50.0 8.3 15.0 18.0
	%A 48 48 48 0 0
	%B 52 52 52 100 100
Flow Rate:	0.400mL/min
Injection Volume:	1µL
Temperature:	28°C
Detection:	UV, 360nm
Samples:	Calibration mixes diluted in methanol
Analytes:	1. Formaldehyde DNPH
	2. Acetaldehyde DNPH
	3. Propionaldehyde DNPH
	4. Crotonaldehyde DNPH
	5. Butyraldehyde DNPH
	6. Cyclohexanone DNPH
	7. Valeraldehyde DNPH
	8. Hexanal DNPH
	9. Heptanal DNPH
	10. Octanal DNPH
	11. Nonanal DNPH
	12. Decanal DNPH
	13. Acetone DNPH
	14. Acrolein DNPH
	15. Butanone DNPH
	16. Methacrolein DNPH
	17. Benzaldehyde DNPH
	18. Isovaleraldehyde DNPH
	19. Tolualdehyde DNPH
	20. Xylylaldehyde DNPH

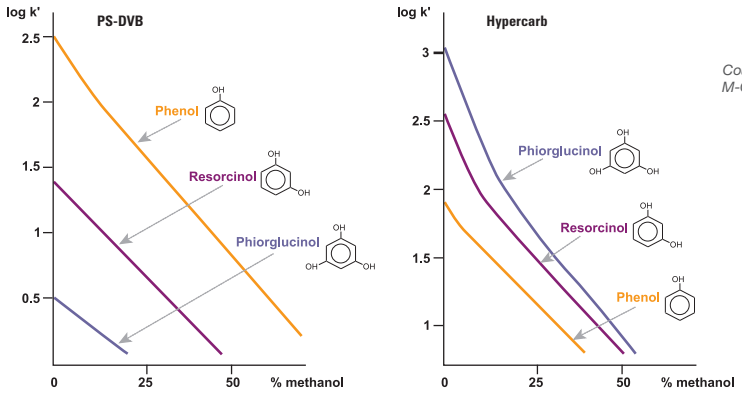
Acclaim Carbonyl C18

Particle Size (µm)	Format	Length (mm)	2.1mm ID	3.0mm ID	4.6mm ID
2.2	RSLC Column	100	077972	077974	–
		150	077973	–	–
3	HPLC Column	150	079011	079010	–
		250	–	079009	–
5	Guard Cartridge (2/pk)	10	079012	079013	079014
		250	–	–	083214

For more information, visit **thermofisher.com/acclaim**

Increased retention of polar analytes

In typical reversed phase chromatography, the retention of an analyte is directly related to its hydrophobicity: the more hydrophobic the analyte, the longer its retention. Conversely, as the polarity of the analyte increases, analyte-solvent interactions begin to dominate and retention is reduced. This observation holds true for the majority of reversed phase systems. An exception to this rule is Hypercarb columns, for which retention may in some cases increase as the polarity of the analyte increases, illustrated to the right. This phenomenon is referred to as the "polar retention effect on graphite" (PREG). This property makes Hypercarb columns particularly useful for the separation of highly polar compounds (with logP as low as -4) that are normally difficult to retain and resolve on silica-based alkyl chain phases. The retention of very polar solutes on Hypercarb columns can be achieved without ion pair reagents or complex mobile phase conditions, as illustrated in the chromatogram below.

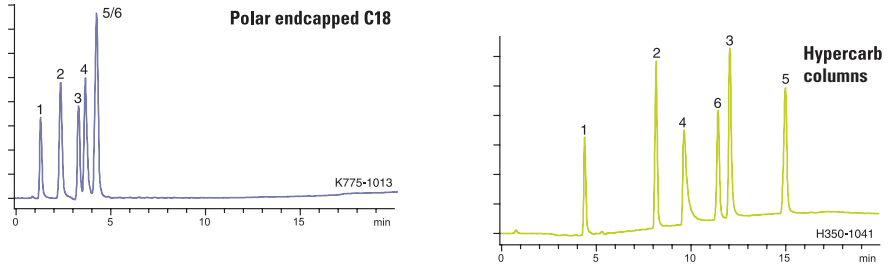


Courtesy V. Coquart and M-C. Henion, J. Chrom., 1992

Retention on Hypercarb columns increases as polarity of the analyte increases, which is the opposite of typical reversed phase materials such as PS-DVB

Extended pH range

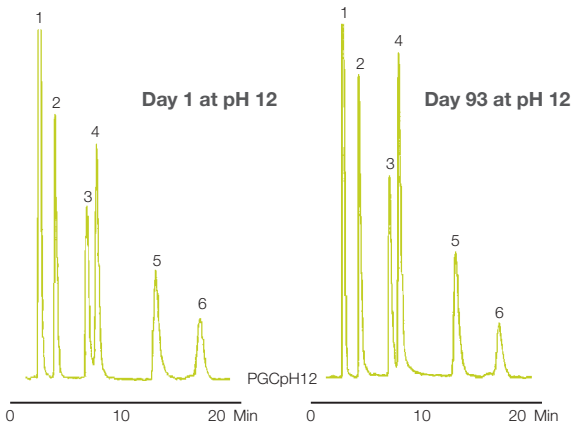
One of the other key benefits of Hypercarb columns is the extreme stability of the phase to chemical or physical attack. Due to the unique characteristics of the media, it can withstand chemical attack across the entire pH range of 0 to 14, allowing applications to be run at pH levels that are incompatible with typical silica-based columns. Hypercarb columns offer more choice in buffer selection while handling both high temperature and high pressure.



Hypercarb, 5µm, 100 x 0.32mm

Mobile Phase A:	H_2O + 0.1% formic acid
Mobile Phase B:	ACN + 0.1% formic acid
Gradient:	0 to 25% B in 15 minutes
Temperature:	25°C
Flow Rate:	8µL/min
Detection:	UV, 254nm
Analytes:	1. Cytosine 2. Uracil 3. Guanine 4. Adenine 5. Xanthine 6. Thymine

Additional retention is achieved for polar compounds using a Hypercarb column compared to a polar endcapped C18.
Note also the change in elution order.



Hypercarb, 5µm, 100 x 4.6mm

Mobile Phase:	MeOH:H_2O
Gradient:	70:30
Flow Rate:	0.7mL/min
Detection:	UV, 254nm
Analytes:	1. Acetone 2. Phenol 3. p-Cresol 4. Anisol 5. Phenetole 6. 3,5 -Xylenol

Hypercarb column stability at pH 12: retention and selectivity do not change even after 93 days of storage in 0.1M NaOH/MeOH