

Durashell C18 and C8

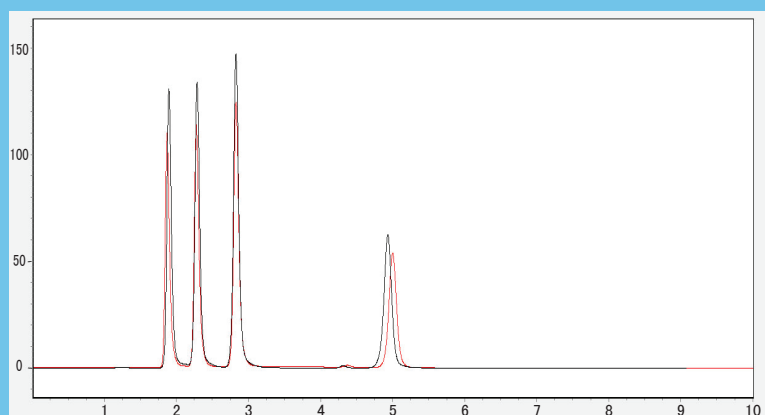
Expanding into high pH applications with columns of superior stability!

The Durashell series of chromatograph columns have been newly developed by Agela Technologies, Inc. by using its proprietary Durashell technology for applications in extended pH range. Manufactured with Agela's proprietary Durashell technology, these columns are stable in both extremely high and low pH environments. By applying the technology of carbon-hybridization bonding on the surface of silica, attack on silica by basic (alkaline) solutions has been effectively prevented and the life of the columns has been extended. In addition, the Durashell C18 columns have very high loading capacity for basic compounds. Therefore, they are suitable for preparative processes of basic chemical compounds.

The characteristics of Durashell, as indicated by "Dura" used in Durashell for "durable", are:

1. Excellent stability in a wide range of pH, pH = 1.0 to 12.0
2. Very inert surface, which leads to a very symmetric peak shape for basic or acidic compounds
3. High loading capacity: can be used as preparative columns

Excellent Stability at Extreme pHs



Red: Initial Chromatogram

Black: Final Chromatogram after 600 hours experiment

Column: Durashell C18, 5 μ m, 4.6 X150 mm

Chromatography Testing Conditions

Mobile phase: methanol:water=85:15

Flow rate : 0.8 mL/min

Detection wavelength: 254 nm;

Temperature: 30 $^{\circ}$ C;

Injection: 1 μ L

Sample: Uracil, Phenol, Nitrobenzene, Naphthalene
(according to retention time sequence)

Aging Conditions:

Mobile phase:

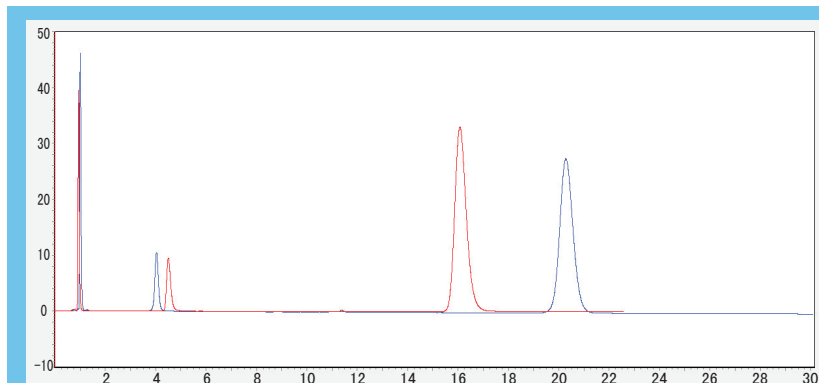
Methanol / Triethylamine water solution (pH=12) = 40 / 60

Flow rate: 1.0 mL/min

Temperature: 60 $^{\circ}$ C

Better Peak Shape, Superior Separation Efficiency and Larger Loading Capacity

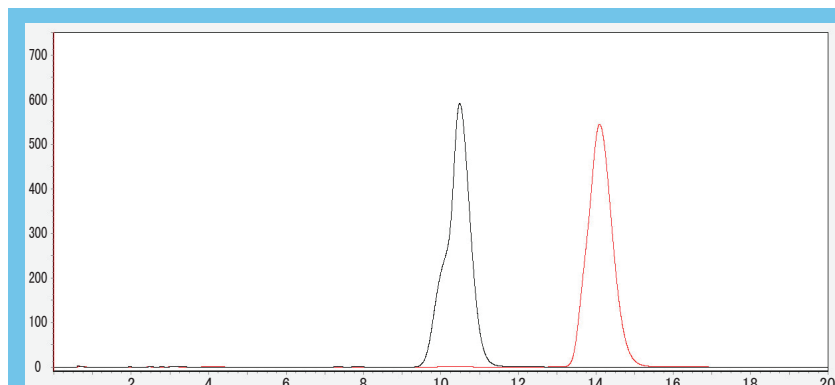
Column performance comparison under basic conditions



Blue: Durashell C18 Red : Gemini-NX

Mobile phase: MeOH : 0.1% ammonia = 70:30
Flow rate: 1.0 mL/min
Injection volume: 2 μ L
Wavelength: 254 nm
Column Temperature: 30 $^{\circ}$ C
Column: Durashell C18, 5 μ m, 100 $\text{\AA}$, 4.6X100 mm
Gemini-NX C18, 5 μ m, 110 $\text{\AA}$, 4.6X100 mm
Sample: Uracil, Propranolol Hydrochloride, Amitriptyline
(according to retention time sequence)

Comparison on loading capacity

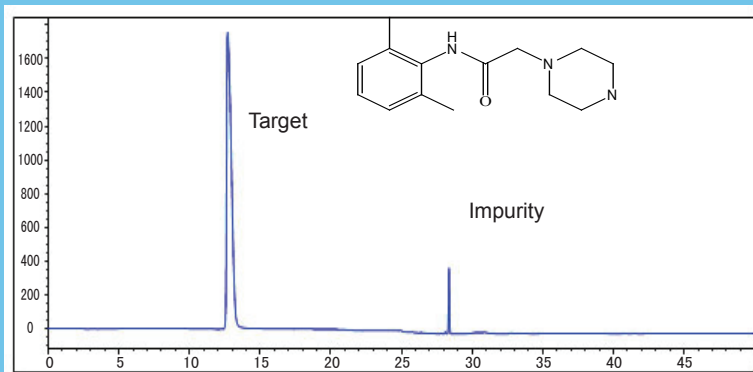


Red: Durashell C18 Black: Gemini-NX C18

Mobile phase: MeOH : 0.1% ammonia = 70:30
Injection volume: 10 μ L (equivalent to 60 μ g)
Column: Durashell C18, 5 μ m, 100 $\text{\AA}$, 4.6X100 mm
Gemini-NX C18, 5 μ m, 110 $\text{\AA}$, 4.6X100 mm
Sample: Amitriptyline (6.0 mg/mL)

Application Examples

In common HPLC practice, a basic mobile phase, is usually used to get a good separation. However, under such pH conditions, the lifetime of a regular columns is short. Deterioration of column efficiency and tailing becomes an issue after extended usage. These are caused by basic solutions of mobile phases dissolving silica substrates and thus reducing the column's lifetime.



Column: Agela Durashell-C18 4.6×250 mm, 5 μ m 100 Å
(Catalog Number: DC952505-0)
Wavelength: 220 nm; Column Temperature: 30 °C; Flow rate: 1.0 mL/min; Injection volume: 5 μ L; Sample: 50 % Acetonitrile / H₂O as dilution solution, take 25 mg of the sample and add it into 50 mL , graduated cylinder, dilute to the mark, shake and filtrate.

Mobile phase: pH=7.0 phosphate buffer

Time (min)	Phosphate buffer %	Acetonitrile %
0	90	10
15	90	10
25	40	60
40	40	60

New Guard Columns

In routine HPLC experiments, despite small injection sample quantities, there is always residue left on the heads of columns after each run, particularly for natural plants and herbal medicinal and biological samples. It cannot be quarantined that these residues will be completely from the head of columns. These residues contaminate columns and result in a gradually decreased separation efficiency over time.

Agela's newly launched guard columns extend the lifetime of analytical columns significantly. It helps experiments go faster with fewer complications. In addition, with Agela's new guard columns, one no longer needs to use a connector for the PEEK tube and head, which results in reduced dead volume. The new guard columns are ready to plug in and use. Please contact Agela's Customer Service for further details.



Ordering Information

Column Type	Dimension (mm)	Particle Size (μ m)	Pore Size (Å)	Cat. No. Durashell C18	Cat. No. Durashell C8	Price (USD)
Analytical Column	2.1×30	5	100	DC950302-0	DC850302-0	295
Analytical Column	2.1×50	5	100	DC950502-0	DC850502-0	295
Analytical Column	2.1×100	5	100	DC951002-0	DC851002-0	356
Analytical Column	2.1×150	5	100	DC951502-0	DC851502-0	408
Analytical Column	4.6×50	5	100	DC950505-0	DC850505-0	295
Analytical Column	4.6×100	5	100	DC951005-0	DC851005-0	362
Analytical Column	4.6×150	5	100	DC951505-0	DC851505-0	399
Analytical Column	4.6×200	5	100	DC952005-0	DC852005-0	417
Analytical Column	4.6×250	5	100	DC952505-0	DC852505-0	438
Core-Shell Column	4.6×10 4/pk	5	100	DC950105-0	DC850105-0	178
Analytical Column	2.1×20	3	150	DC930202-0	DC830202-0	295
Analytical Column	2.1×30	3	150	DC930302-0	DC830302-0	295
Analytical Column	2.1×50	3	150	DC930502-0	DC830502-0	295
Analytical Column	2.1×100	3	150	DC931002-0	DC831002-0	366
Analytical Column	2.1×150	3	150	DC931502-0	DC831502-0	438
Analytical Column	4.6×50	3	150	DC930505-0	DC830505-0	315
Analytical Column	4.6×100	3	150	DC931005-0	DC831005-0	386
Analytical Column	4.6×150	3	150	DC931505-0	DC831505-0	438
Core-Shell Column	4.6×10 4/pk	3	150	DC930105-0	DC830105-0	178
Semi Prep column	10×150	5	100	DC951510-0	DC851510-0	899
Semi Prep column	10×250	5	100	DC952510-0	DC852510-0	999
Prep column	20×50	5	100	DC950520-0	DC850520-0	1069
Prep column	20×100	5	100	DC951020-0	DC851020-0	1699
Prep column	20×150	5	100	DC951520-0	DC851520-0	2399
Prep column	20×250	5	100	DC952520-0	DC852520-0	2850

Column Type	Dimension (mm)	Particle Size (μm)	Pore Size ($\text{\AA}$)	Cat. No. Durashell C18	Cat. No. Durashell C8	Price (USD)
Prep column	30×100	5	100	DC951030-0	DC851030-0	3290
Prep column	30×150	5	100	DC951530-0	DC851530-0	4799
Prep column	30×250	5	100	DC952530-0	DC852530-0	5990
Guard Column	20×10	5	100	DC950120-0	DC850120-0	248
Semi Prep column	10×150	10	150	DC901510-0	DC801510-0	829
Semi Prep column	10×250	10	150	DC902510-0	DC802510-0	899
Prep column	20×50	10	150	DC900520-0	DC800520-0	899
Prep column	20×150	10	150	DC901520-0	DC801520-0	1250
Prep column	20×250	10	150	DC902520-0	DC802520-0	1590
Prep column	30×100	10	150	DC901030-0	DC801030-0	2190
Prep column	30×150	10	150	DC901530-0	DC801530-0	2890
Prep column	30×250	10	150	DC902530-0	DC802530-0	3590
Prep column	50×150	10	150	DC901550-0	DC801550-0	5250
Prep column	50×250	10	150	DC902550-0	DC802550-0	6990
Guard Column	20×10	10	150	DC900120-0	DC800120-0	198

*Price for USA only

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