



# ALTIM<sup>®</sup>

COLUMNS



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# Over View

Rigorous quality control of physical properties and strict chromatographic tests for inertness and selectivity, contribute to the production of ALTIN Columns with an outstanding reproducibility and long column life.

Altin has been synthesizing base silica gels and bonding phases with end capping for columns packing, which enable us stable supply with exceptionally high quality

Our strength lies in our deep experience in particle bonding technology and highly controlled silica particle synthesis

Altin columns are the best choice for method development, owing to complete bonding chemistries and stable performance. The constant changing of our customer demands continually flow into new and ongoing development of our products and service.

Because of our superior production processes and our adaptability to the trends of chromatography we are able to provide products of highest quality at best prices.

We aspire to offer matchless solutions coupled with top quality services to extend reliable support and contribute to the future of Pharma, Life sciences, Diagnostics and all other chemical industries.

Altin has an uncompromised quality policy of business. Customer demands provide the basis for our strategy and actions.







The Altin-C18 columns are made of ultra pure spherical porous silica with unique bonding chemistry and endcapping technology. It's the most widely used column in the market, well adaptable to the methods deployed by the chemists. It has an efficient plate count and well tolerable to wide pH ranges.

Altin-C18 exhibits excellent peak symmetry due to its special endcapping technology as unwanted silanol interactions are avoided and hence the peak tailing is taken care of.

the column has carbon load of 19% and exhibits a relatively strong retentivity compared to commercially available ODS Columns.

Altin-C18 is ideal choice for separation of Polar compounds.

## Technical Specifications



Particle size -  $\mu\text{m}$

3,5,10

Pore size -  $\text{\AA}$

100

Surface Area  $\text{m}^2/\text{g}$

340

Carbon Load - %

19

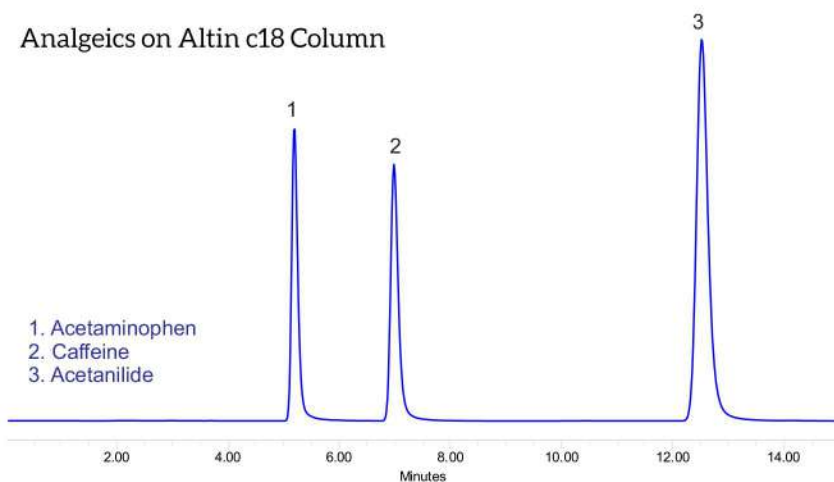
pH Range

1-10

USP

L1

Analgesics on Altin c18 Column



1. Acetaminophen  
2. Caffeine  
3. Acetanilide

Column - Altin C18 250mm x 4.6 mm, 5 $\mu\text{M}$

Detector - UV 220 nm

Flow Rate - 0.7 ml/min

Mobile Phase - Methanol: Water 40:60

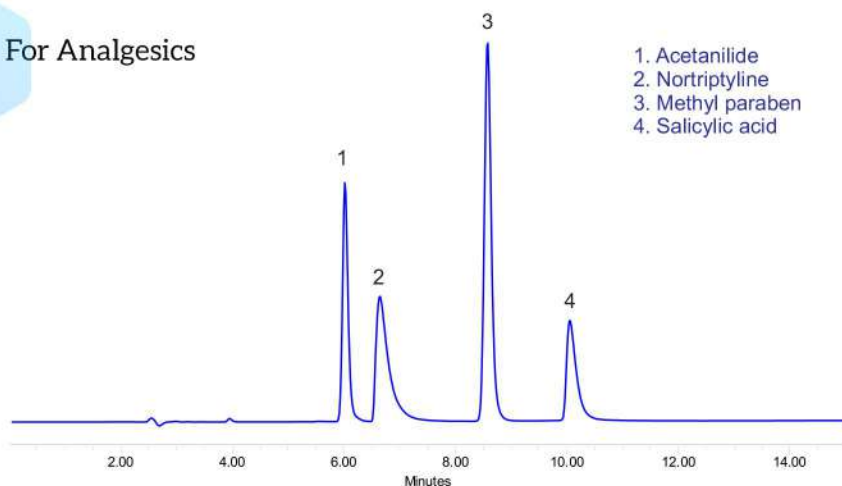


# Applications



## For Analgesics

1. Acetanilide
2. Nortriptyline
3. Methyl paraben
4. Salicylic acid



Column: Altin C18 250 x 4.6 mm, 5µM

Detector: UV 254 nm

Flow Rate: 1.0 ml/min

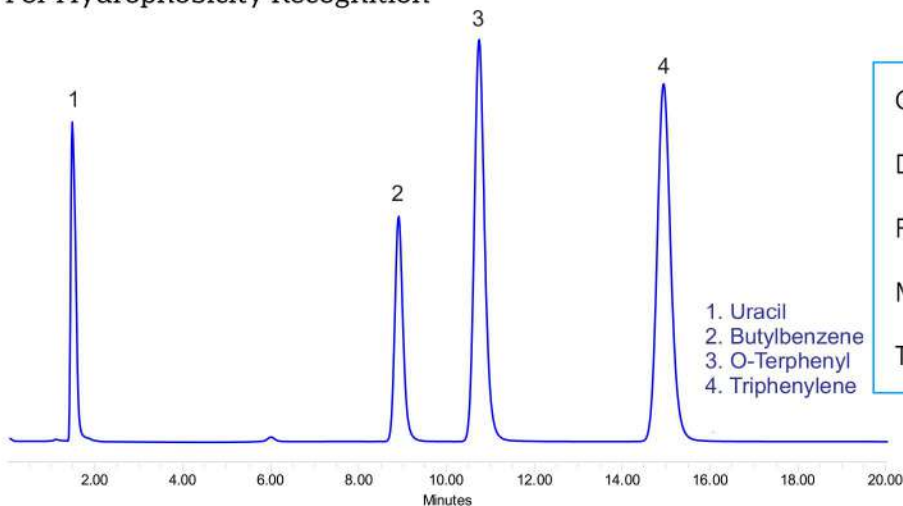
Mobile Phase: A :0.1% Formic acid in Water

B: 0.1% Formic acid in Acetonitrile

Gradient: 30% - 40% B in 15 minutes.

## For Hydrophobicity Recognition

1. Uracil
2. Butylbenzene
3. O-Terphenyl
4. Triphenylene



Column: Altin C18 150 x 4.6 mm, 5µM

Detector: UV 254 nm

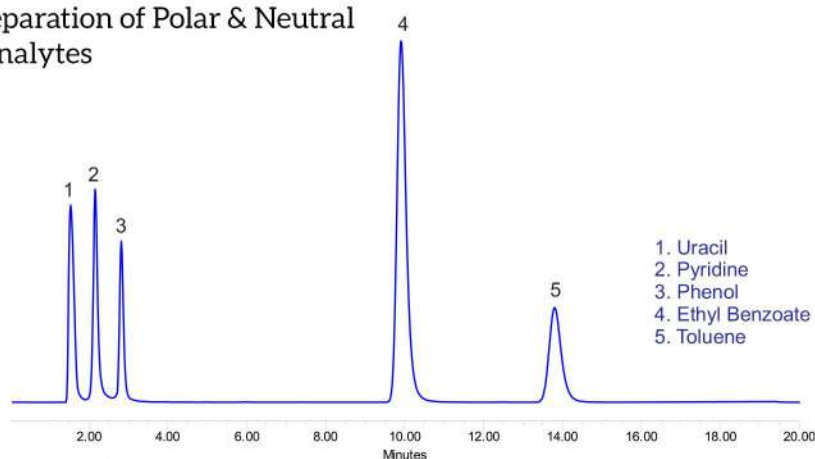
Flow Rate: 1.0 ml/min

Mobile Phase: Methanol: Water 80:20

Temp: 37°C

## Separation of Polar & Neutral Analytes

1. Uracil
2. Pyridine
3. Phenol
4. Ethyl Benzoate
5. Toluene



Column: Altin C18 150 x 4.6 mm, 5µM

Detector: UV 254 nm

Flow Rate: 1.0 ml/min

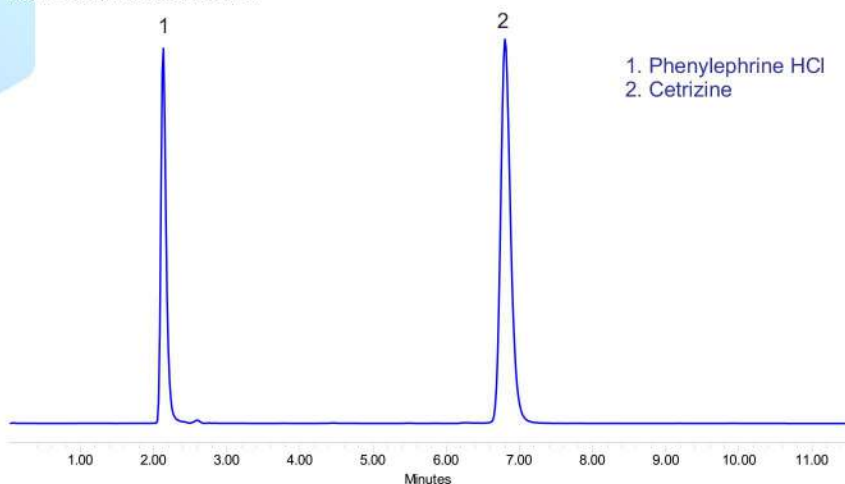
Mobile Phase: Methanol: Water 60:40



# Applications



## For Cold medications



Column: Altin C18 250 x 4.6 mm, 5 $\mu$ M

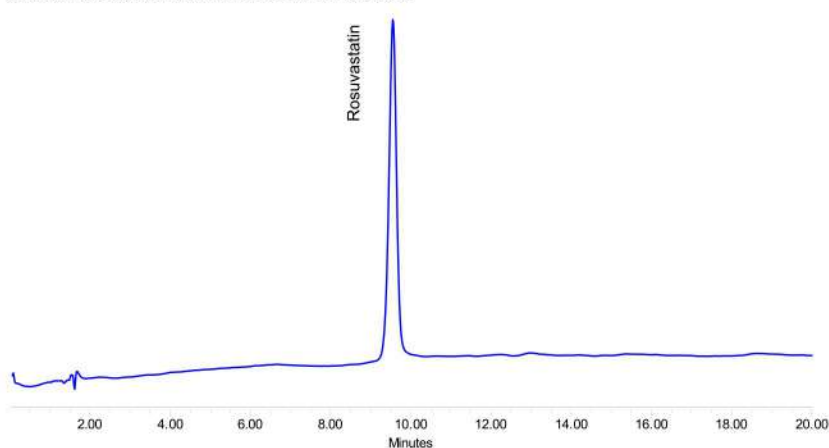
Detector: UV 228 nm

Flow Rate: 1 ml/min

Mobile Phase: Buffer : Acetonitrile 60:40

Buffer: 0.2% TEA in H<sub>2</sub>O pH 3.0 with H<sub>3</sub>PO<sub>4</sub>

## Rosuvastatin calcium USP Method



Column: Altin C18 250 x 3.2 mm, 5 $\mu$ M

Detector: UV 228 nm

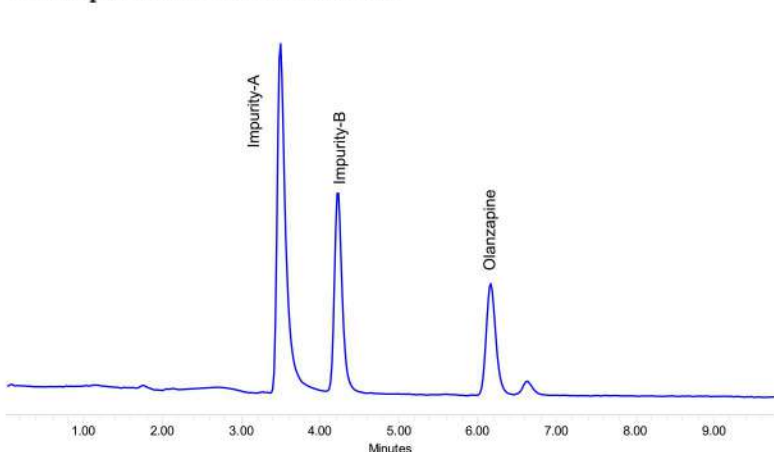
Flow Rate: 0.75 ml/min

Column temp: 40 $^{\circ}$  C

Mobile Phase: Acetonitrile : Buffer : Water  
37 : 01 : 62

Buffer: 1% TEA in H<sub>2</sub>O

## Olanzapine on Altin C18 Column



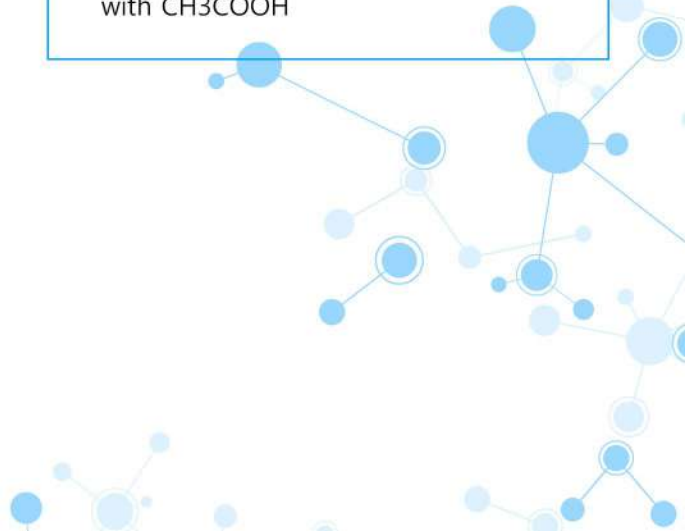
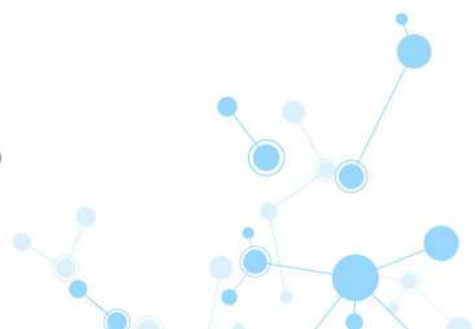
Column: Altin C18 250 x 4.6 mm, 5 $\mu$ M

Detector: UV 228 nm

Flow Rate: 1.0. ml/min

Mobile Phase:  
Buffer : Acetonitrile : Methanol  
30 : 245 : 25

Buffer: 0.7% TEA in H<sub>2</sub>O pH 10.8  
with CH<sub>3</sub>COOH







The Altin C8 column is preferred in cases where, strong hydrophobic interactions are not desired. When compared to the ALTIN C18 column C8 is less retentive when separating the highly hydrophobic or neutral compounds as it saves analysis time.

ALTIN C8 Column maintains the same extreme inertness to any type of compounds just like ALTIN C18 which enables rapid analysis of highly hydrophobic compounds delivering symmetric peaks, optimized surface area, pore size and chemical bonding with superior peak shape

The ALTIN C8 column is perfectly suitable for working over wide pH range due to its outstanding stability and superior bonding technology.

ALTIN C8 continuous to be widely used and highly reliable column for established methods in pharmaceuticals and research labs.

## Technical Specifications



Particle size -  $\mu\text{m}$

3,5,10

Pore size -  $\text{\AA}$

100

Surface Area  $\text{m}^2/\text{g}$

340

Carbon Load - %

9

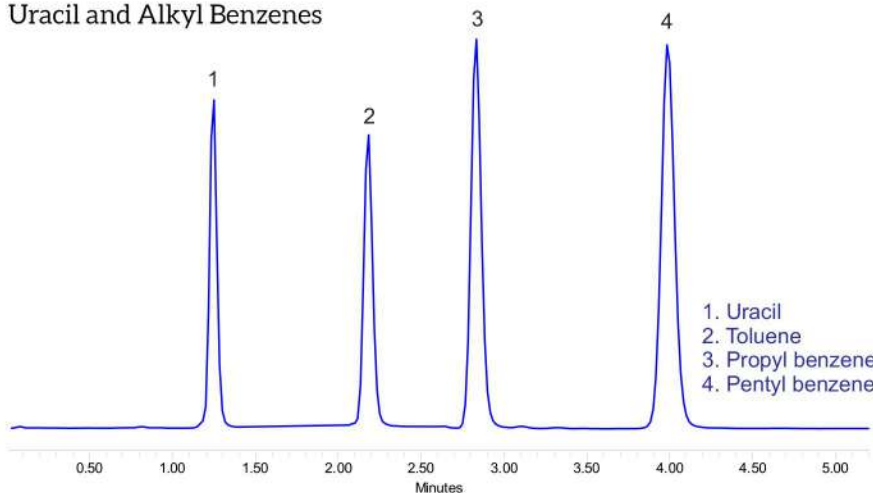
pH Range

1-10

USP

L7

Uracil and Alkyl Benzenes



Column : Altin C8 150mm x 4.6 mm, 5 $\mu\text{M}$

Detector : UV 254 nm

Flow Rate: 1.3 ml/min

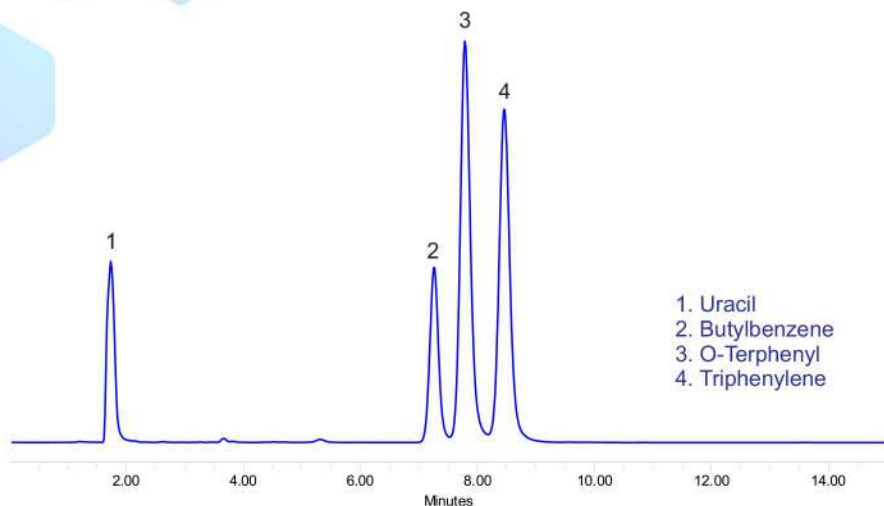
Mobile Phase: Acetonitrile : Water 85 : 15





# Applications

## For Hydrophobicity Recognition



Column: Altin C8 150 x 4.6 mm, 5 $\mu$ M

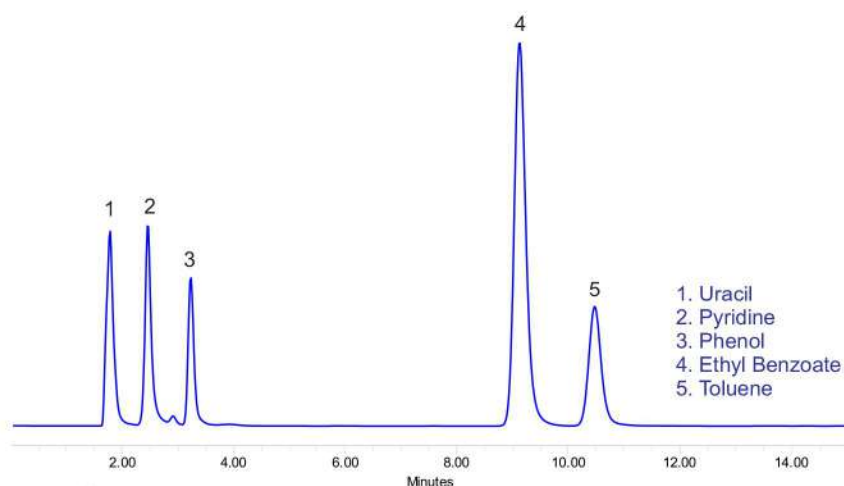
Detector: UV 254 nm

Flow Rate: 1.0 ml/min

Mobile Phase: Methanol: Water 80:20

Temp: 37°C

## Separation of Polar and Neutral Analytes



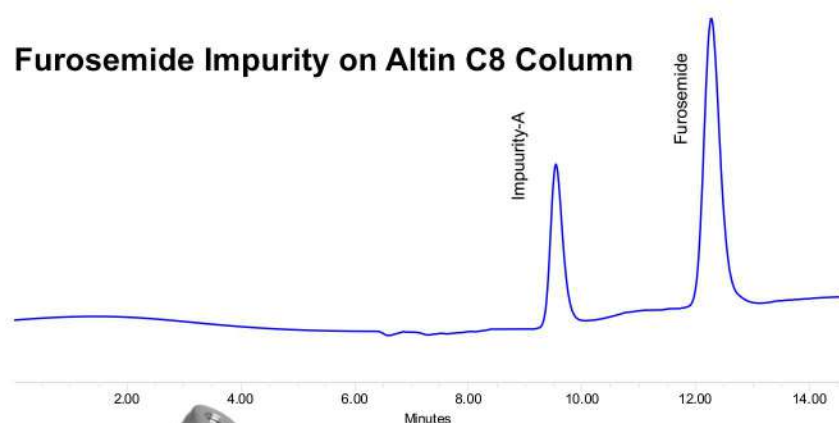
Column: Altin C8 150 x 4.6 mm, 5 $\mu$ M

Detector: UV 254 nm

Flow Rate: 1.0 ml/min

Mobile Phase: Methanol: Water 60:40

## Furosemide Impurity on Altin C8 Column



Column: Altin C8 250 x 4.6 mm, 5 $\mu$ M

Detector: UV 238 nm

Flow Rate: 1.0 ml/min

Mobile Phase: 2g of KH<sub>2</sub>PO<sub>4</sub> + 2.5g of Cetrime in 700ml H<sub>2</sub>O and pH to 7.0 with 6M Ammonia, to this add 300ml of Propan-1-ol





# ALTIN Bi Phenyl - Unique Selectivity



Generally when compared the ALTIN C18, and C8 phases ALTIN PHENYL has reduced retentivity towards the non polar compounds But it has higher selectivity towards the polar aromatic compounds when compared to the C18 and C8 phases

This makes ALTIN Phenyl an excellent choice for separation of mixtures of complex Polar and non- polar compounds.

The Phenyl columns contain Longer alkyl linked diphenyl ligands attached to it therefore these exhibit High hydrolytic stability enhancing higher steric selectivity with Strong pi-pi interactions

Enhanced aromatic selectivity is beneficial for applications in drug development and testing where the compounds commonly contain rings, conjugation products and ring substituents.

ALTIN Phenyl has been successfully used to separate positional isomers, tocopherols, flavonoids, Poly-nuclear aromatics and nitroaromatic compounds, active pharmaceutical agents and related compounds

The Column packing and endcapping of this column is highly controlled ensuring column to column reproducibility



## Technical Specifications

Particle size -  $\mu\text{m}$

3,5,10

Pore size -  $\text{\AA}$

100

Surface Area  $\text{m}^2/\text{g}$

340

Carbon Load - %

10

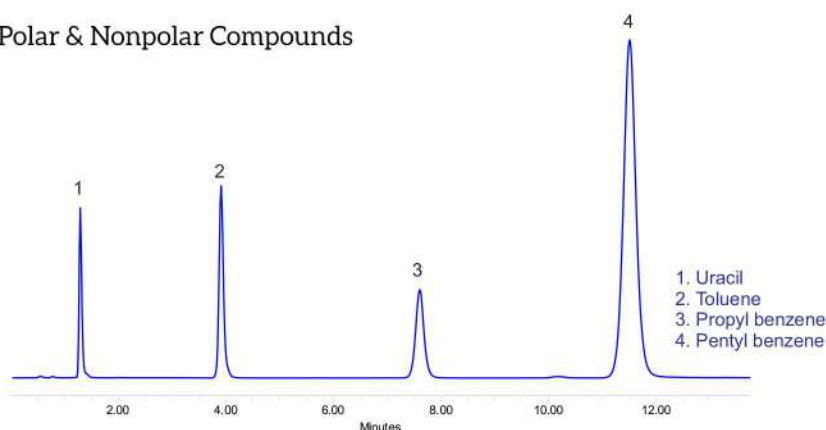
pH Range

1-10

USP

L11

## Polar & Nonpolar Compounds



Column - Altin Phenyl 150mm x 4.6 mm, 5 $\mu\text{m}$

Detector - UV 254 nm

Flow Rate - 1.3 ml/min

Mobile Phase - Acetonitrile : Water 45 : 55





ALTIN SILICA HPLC column is choice for separation of strongly hydrophilic compounds in a normal phase mode with a high nonpolar mobile phase.

Altin Silica column is made of Ultra pure fully porous silica gel with a very low acidity and metal content. The optimum manufacturing process guarantees an excellent batch to batch reproducibility. The silica is available in several particle and pore sizes.

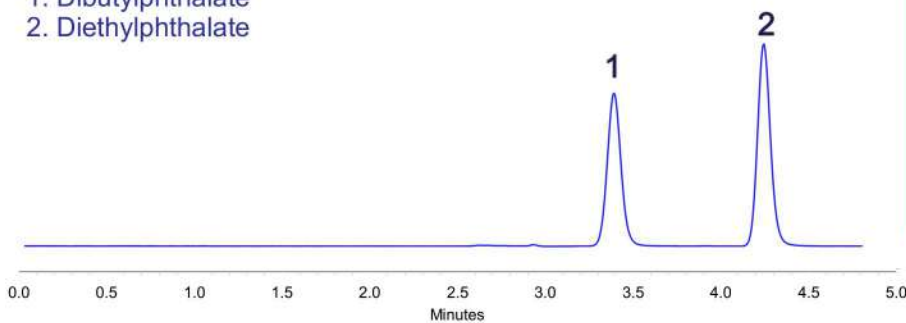
This column is suitable for most normal phase chromatography applications and it is the best column for separation of polar compounds that shows tailing on other company silica columns and replaces most of the silica gel liquid chromatography columns in the market

## Technical Specifications

Particle size - $\mu\text{m}$	Pore size - $\text{\AA}$	Surface Area $\text{m}^2/\text{g}$	Carbon Load - %	pH Range	USP
3,5,10	100	340	0	1-10	L3

### Application of Phthalates

1. Dibutylphthalate
2. Diethylphthalate



Column - Altin Silica 250mm x 4.6 mm, 5 $\mu\text{M}$   
Detector - UV 254 nm  
Flow Rate - 1.3 ml/min  
Mobile Phase - N-Hexane : IPA 98.5 : 1.5







ALTIN CN columns are highly recommended for all pharmacopeia methods requiring a Cyano phase Column. This column can be used in either reversed or normal phase separation modes.

In reversed Phase Mode CN has higher selectivity to polar compounds and less hydrophobic selectivity, due to this it elutes the hydrophobic molecules faster when compared to the C18 or Phenyl column. Altin CN has highest polarity among all reversed phase Columns

Normal Phase CN column is better alternative to Silica column. It has faster equilibrium and more consistent than the non derivatized silica gel.

## Benefits

- Column-to column and batch to batch reproducibility.
- Replaces most of the cyano liquid chromatography columns on the market .
- Stable high coverage bonded phase.
- Highly inert packing material results in less tailing of peaks of any type of analyses
- Can be used in both reversed phase and normal phase separations
- Unique selectivity and Low Hydrophobicity

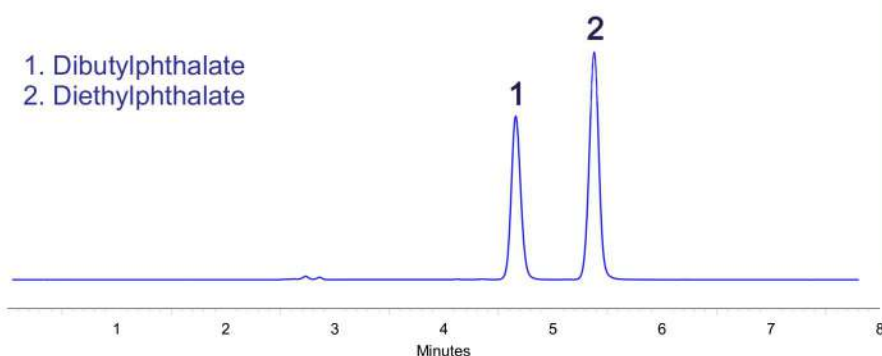
## Technical Specifications



Particle size - $\mu\text{m}$	Pore size - $\text{\AA}$	Surface Area $\text{m}^2/\text{g}$	Carbon Load - %	pH Range	USP
3,5,10	100	340	8	1-10	L10

### Application of Phthalates

1. Dibutylphthalate
2. Diethylphthalate



Column : Altin CN 250mm x 4.6 mm, 5 $\mu\text{m}$

Detector : UV 254 nm

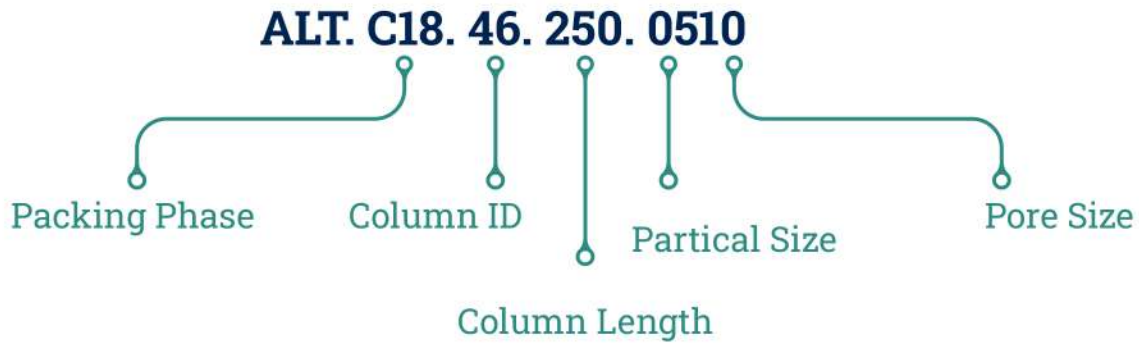
Flow Rate: 1.3 ml/min

Mobile Phase: N – Hexane : IPA 98.5 : 1.5





## Ordering information for ALTIN Columns



Column	Column Dimensions (mm)	Particle Size ( $\mu\text{M}$ )	Part Number
Altin C18	250mm x 4.6mm	5	ALT.C18.46.250.0510
Altin C8	150mm x 4.6mm	3	ALT.C8.46.150.0310
Altin Pheyl	250mm x 4.6mm	5	ALT.Ph.46.250.0510
Altin Silica	100mm x 3.0mm	5	ALT.Si.30.100.0510
Altin Cyano	250mm x 4.6mm	5	ALT.CN.46.250.0510

For Enquiries Contact

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Life Sciences

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