

# Polymer-based Reversed Phase Chromatography Columns (Asahipak)

## Features

### ODP-50 C4P-50 4D

- Relatively large pore size is suitable for the analysis of amino acids, peptides, and proteins
- Usable in a wide pH range from pH 2 to 13
- Usable in 100 % water and buffer solution
- Best used for the analysis of basic substances
- ODP-50 fulfills USP-NF L67 requirements

### • Standard columns

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (µm)	Pore Size (Å)	Column Size (mm) I.D. x Length	Shipping Solvent
F7620002	<b>Asahipak ODP-50 6D</b>	≥ 9,000	Octadecyl	5	250	<b>6.0 x 150</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F7620001	<b>Asahipak ODP-50 6E</b>	≥ 14,000	Octadecyl	5	250	<b>6.0 x 250</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F6710001	<b>Asahipak ODP-50G 6A</b>	(guard column)	Octadecyl	5	—	<b>6.0 x 10</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F6710023	<b>Asahipak ODP-50 4B</b>	≥ 2,500	Octadecyl	5	250	<b>4.6 x 50</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F7620004	<b>Asahipak ODP-50 4D</b>	≥ 9,000	Octadecyl	5	250	<b>4.6 x 150</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F7620003	<b>Asahipak ODP-50 4E</b>	≥ 14,000	Octadecyl	5	250	<b>4.6 x 250</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F6710022	<b>Asahipak ODP-50G 4A</b>	(guard column)	Octadecyl	5	—	<b>4.6 x 10</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F7620008	<b>Asahipak C4P-50 4D</b>	≥ 6,000	Butyl	5	250	<b>4.6 x 150</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F6710003	<b>Asahipak C4P-50G 4A</b>	(guard column)	Butyl	5	—	<b>4.6 x 10</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65

Base Material: Polyvinyl alcohol

### • Semi-micro columns

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (µm)	Pore Size (Å)	Column Size (mm) I.D. x Length	Shipping Solvent
F7620009	<b>Asahipak ODP-50 2D</b>	≥ 5,000	Octadecyl	5	250	<b>2.0 x 150</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F6713001	<b>Asahipak ODP-50G 2A</b>	(guard column)	Octadecyl	5	—	<b>2.0 x 10</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65

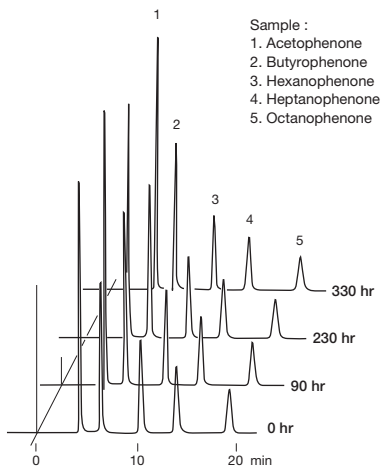
Base Material: Polyvinyl alcohol

### • Preparative columns [ Preparative columns are made to order. ]

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (µm)	Column Size (mm) I.D. x Length	Shipping Solvent
F6820001	<b>Asahipak ODP-50 10E</b>	≥ 10,000	Octadecyl	5	<b>10.0 x 250</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F6820035	<b>Asahipak ODP-90 20F</b>	≥ 9,000	Octadecyl	9	<b>20.0 x 300</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65
F6710004	<b>Asahipak ODP-130G 7B</b>	(guard column)	Octadecyl	13	<b>7.5 x 50</b>	H <sub>2</sub> O/CH <sub>3</sub> CN = 35/65

Base Material: Polyvinyl alcohol

### Alkaline tolerance of ODP-50

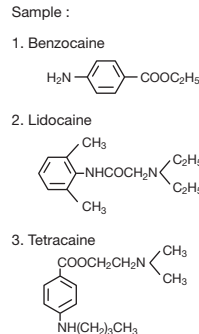
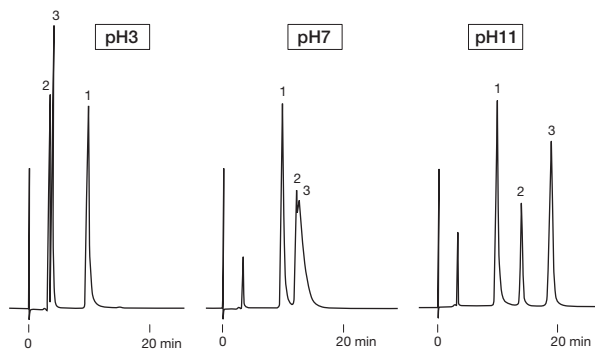


Sample :  
 1. Acetophenone  
 2. Butyrophenone  
 3. Hexanophenone  
 4. Heptanophenone  
 5. Octanophenone

Column : Shodex Asahipak ODP-50 4D  
 Eluent : 10 mM NaOH aq. (pH12.0)/CH<sub>3</sub>CN = 35/65  
 Flow rate : 0.6 mL/min  
 Detector : UV (254 nm)  
 Column temp. : 30 °C

### Local anesthetics

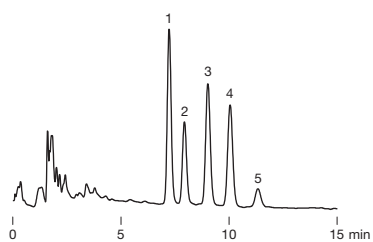
Dissociation of tertiary amino groups in basic drugs can be suppressed by making pH of the eluent higher than pKa of the amino groups. This increases the relative hydrophobicity of the basic drugs, thereby allowing the column to retain the drugs stronger and provide baseline separation of them.



Column : Shodex Asahipak ODP-50 4D  
 Eluent : 25 mM Phosphate buffer/CH<sub>3</sub>CN = 60/40  
 Flow rate : 0.6 mL/min  
 Detector : UV (254 nm)  
 Column temp. : 30 °C

### Unsaturated fatty acids

Sample : 0.002 % each (in Ethanol), 5 µL  
 1. EPA (Eicosapentaenoic acid)  
 2. α-Linolenic acid  
 3. DHA (Docosahexaenoic acid)  
 4. Arachidonic acid  
 5. Linoleic acid

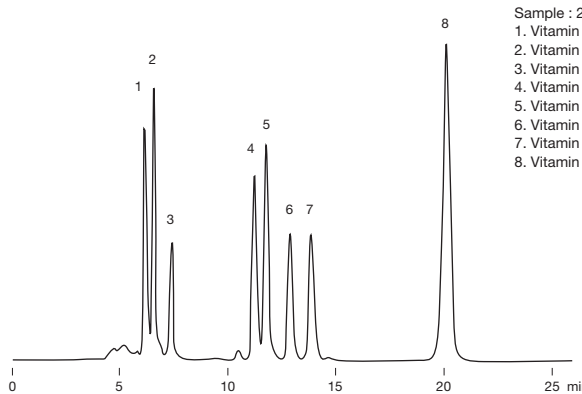


Column : Shodex Asahipak ODP-50 4D  
 Eluent : 0.1 % H<sub>3</sub>PO<sub>4</sub> in (H<sub>2</sub>O/CH<sub>3</sub>CN = 30/70)  
 Flow rate : 1.0 mL/min  
 Detector : UV (215 nm)  
 Column temp. : 40 °C

### Fat-soluble vitamins

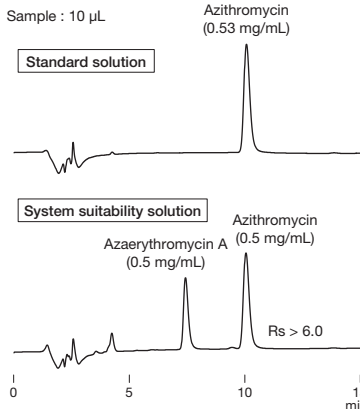
Sample : 20 µL

1. Vitamin K <sub>3</sub>	1.5 µg/mL
2. Vitamin A	0.3 µg/mL
3. Vitamin A acetate	1.9 µg/mL
4. Vitamin D <sub>2</sub>	0.3 µg/mL
5. Vitamin D <sub>3</sub>	0.3 µg/mL
6. Vitamin E acetate	2.4 µg/mL
7. Vitamin E	2.5 µg/mL
8. Vitamin K <sub>1</sub>	2.4 µg/mL



Column : Shodex Asahipak ODP-50 4E  
 Eluent : CH<sub>3</sub>CN/CH<sub>3</sub>OH = 50/50  
 Flow rate : 0.6 mL/min  
 Detector : UV (280 nm)  
 Column temp. : 30 °C

### Analysis of azithromycin according to USP-NF method



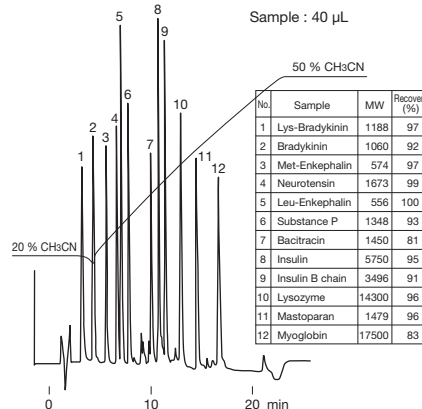
Sample : 10 µL  
 Azithromycin (0.53 mg/mL)

Standard solution

System suitability solution  
 Azaerythromycin A (0.5 mg/mL)  
 Azithromycin (0.5 mg/mL)  
 Rs > 6.0

Column : Shodex Asahipak ODP-50 4E  
 Eluent : 6.7 g/L Dibasic potassium phosphate aq. (pH11.0 adjusted with 10 M KOH) /CH<sub>3</sub>CN = 40/60  
 Flow rate : 1.0 mL/min  
 Detector : UV (210 nm)  
 Column temp. : 40 °C

### Gradient analysis of proteins and peptides



Sample : 40 µL

Column : Shodex Asahipak ODP-50 6D  
 Eluent : (A); 0.05 % TFA aq./CH<sub>3</sub>CN = 80/20 (B); 0.05 % TFA aq./CH<sub>3</sub>CN = 50/50  
 Linear gradient; (A) to (B), 20 min  
 Flow rate : 1.0 mL/min  
 Detector : UV (220 nm)  
 Column temp. : 30 °C