Колонки для ионной хроматографии (Anion Analysis)

Технические характеристики

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Ion Chromatography Columns (Anion Analysis)

Features

NI-424
I-524A
- Ideal for anion non-suppressor methods
- NI-424 provides simultaneous analysis of fluoride and phosphate ions
- I-524A fulfills USP-NF L23 requirements

SI-90 4E
SI-50 4E
SI-52 4E
- Suitable for anion suppressor methods with sodium carbonate eluent
- Suitable for the quantitative analysis of fluoride ion
- Carbonate peak does not interfere with analysis
- SI-50 4E separates target inorganic anions from organic acids
- SI-52 4E provides simultaneous analysis of oxyhalides and general inorganic ions

SI-35
- Rapid-analysis type columns used with suppressor and sodium carbonate eluent
- SI-35 4D provides rapid analysis of oxyhalides and general inorganic ions
- SI-35 2B provides rapid analysis of general inorganic ions

SI-36 4D
SI-37 4D
- Suitable for anion suppressor methods with potassium hydroxide eluent
- SI-36 4D provides good separation of sulfite and sulfate ions
- SI-37 4D provides high sensitive analysis of oxyhalides in drinking water

For non-suppressor method

- **Standard columns**

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (µm)	Column Size (mm) I.D. x Length	Shipping Solvent
F6995243	**IC NI-424**	≥ 5,000	Quaternary ammonium	5	**4.6 x 100**	8 mM 4-Hydroxybenzoic acid + 2.8 mM Bis-Tris + 2 mM Phenylboronic acid + 0.005 mM CyDTA aq.
F6709616	**IC NI-G**	(guard column)	Quaternary ammonium	5	**4.6 x 10**	8 mM 4-Hydroxybenzoic acid + 2.8 mM Bis-Tris + 2 mM Phenylboronic acid + 0.005 mM CyDTA aq.
F6995240	**IC I-524A**	≥ 2,000	Quaternary ammonium	12	**4.6 x 100**	2.5 mM Phthalic acid + 2.4 mM Tris(hydroxymethyl) aminomethane + 16.2 mM Boric acid aq.
F6700400	**IC IA-G**	(guard column)	Quaternary ammonium	12	**4.6 x 10**	2.5 mM Phthalic acid + 2.4 mM Tris(hydroxymethyl) aminomethane + 16.2 mM Boric acid aq.

Base Material: Polyhydroxymethacrylate
Housing Material: SUS

For suppressor method (Sodium carbonate eluent)

- **Standard columns**

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (µm)	Column Size (mm) I.D. x Length	Shipping Solvent
F6995244	**IC SI-90 4E**	≥ 5,000	Quaternary ammonium	9	**4.0 x 250**	1.8 mM Na_2CO_3 + 1.7 mM $NaHCO_3$ aq.
F6709620	**IC SI-90G**	(guard column)	Quaternary ammonium	9	**4.6 x 10**	1.8 mM Na_2CO_3 + 1.7 mM $NaHCO_3$ aq.
F6995245	**IC SI-50 4E**	≥ 10,000	Quaternary ammonium	5	**4.0 x 250**	3.2 mM Na_2CO_3 + 1.0 mM $NaHCO_3$ aq.
F6709625	**IC SI-50G**	(guard column)	Quaternary ammonium	5	**4.6 x 10**	3.2 mM Na_2CO_3 + 1.0 mM $NaHCO_3$ aq.

Base Material: Polyvinyl alcohol
Housing Material: PEEK

<For oxyhalides analysis>

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (µm)	Column Size (mm) I.D. x Length	Shipping Solvent
F6995260	**IC SI-52 4E**	≥ 14,000	Quaternary ammonium	5	**4.0 x 250**	3.6 mM Na_2CO_3 aq.
F6709626	**IC SI-92G**	(guard column)	Quaternary ammonium	5	**4.6 x 10**	3.6 mM Na_2CO_3 aq.

Base Material: Polyvinyl alcohol
Housing Material: PEEK

<For oxyhalides rapid analysis>

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (µm)	Column Size (mm) I.D. x Length	Shipping Solvent
F6995290	**IC SI-35 4D**	≥ 13,000	Quaternary ammonium	3.5	**4.0 x 150**	3.6 mM Na_2CO_3 aq.
F6709627	**IC SI-95G**	(guard column)	Quaternary ammonium	9	**4.6 x 10**	3.6 mM Na_2CO_3 aq.

Base Material: Polyvinyl alcohol
Housing Material: PEEK

● Semi-micro column

<For rapid analysis>

Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (μm)	Column Size (mm) I.D. x Length	Shipping Solvent
F6995291	**IC SI-35 2B**	≥ 4,000	Quaternary ammonium	3.5	**2.0 x 50**	1.0 mM Na_2CO_3 + 2.0 mM $NaHCO_3$ aq.

Base Material: Polyvinyl alcohol
Housing Material: PEEK

● Guard filter for IC SI-35 2B

Product Code	Product Name	Contents
F6709720	**IC SI-2GF**	One holder and one filter
F6709730	**IC SI-2GF filter**	3 filters

Removes sample-origin insoluble components.

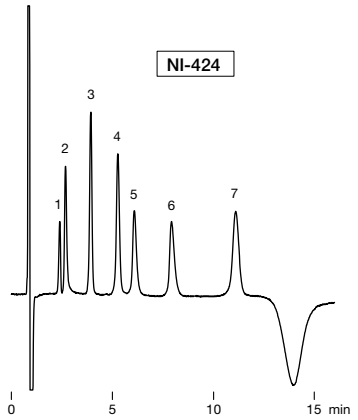
For anion suppressor method (Potassium hydroxide eluent)

● Standard columns

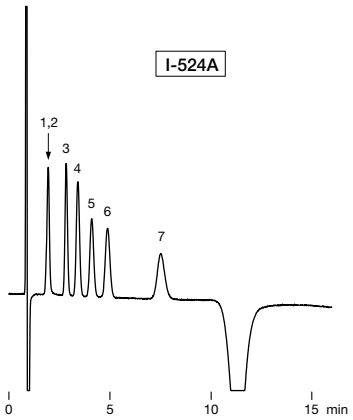
Product Code	Product Name	Plate Number (TP/column)	Functional Group	Particle Size (μm)	Column Size (mm) I.D. x Length	Shipping Solvent
F6999361	**IC SI-36 4D**	≥ 8,500	Quaternary ammonium	3.5	**4.0 x 150**	10 mM Na_2SO_4 aq.
F6999371	**IC SI-37 4D**	≥ 14,000	Quaternary ammonium	3.5	**4.0 x 150**	10 mM Na_2SO_4 aq.
F6709620	**IC SI-90G**	(guard column)	Quaternary ammonium	9	**4.6 x 10**	1.8 mM Na_2CO_3 + 1.7 mM $NaHCO_3$ aq.

Base Material: Polyvinyl alcohol
Housing Material: PEEK

Anion analysis using NI-424 and I-524A (non-suppressor methods)



Sample : 20 µL
1. $H_2PO_4^-$ 10 mg/L
2. F^- 1 mg/L
3. Cl^- 1 mg/L
4. NO_2^- 5 mg/L
5. Br^- 5 mg/L
6. NO_3^- 5 mg/L
7. SO_4^{2-} 5 mg/L



With twice increased theoretical plate number, NI-424 provides a higher performance compared to I-524A.

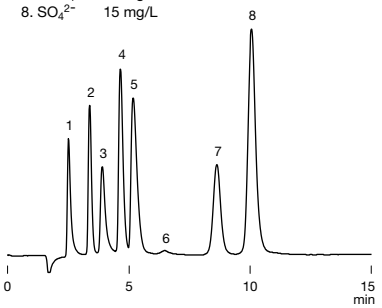
<Features of NI-424>
(1) Enables the separation of $H_2PO_4^-$ and F^- which were difficult to separate with I-524A.
(2) Provides sharper peaks, and resolution between all peaks are well defined. Especially, the separation of Cl^- and NO_2^- is improved.

Column : **Shodex IC NI-424**
Eluent : 8 mM 4-Hydroxybenzoic acid + 2.8 mM Bis-Tris + 2 mM Phenylboronic acid + 0.005 mM *CyDTA aq.
Flow rate : 1.0 mL/min
Detector : Non-suppressed conductivity
Column temp. : 40 ˚C
*CyDTA : trans-1,2-Diaminocyclohexane-N,N,N',N'-tetra acetic acid

Column : **Shodex IC I-524A**
Eluent : 2.5 mM Phthalic acid + 2.3 mM Tris(hydroxymethyl)aminomethane aq.
Flow rate : 1.2 mL/min
Detector : Non-suppressed conductivity
Column temp. : 40 ˚C

Anion analysis using SI-90 4E (suppressor method)

Sample : 20 µL
1. F^- 2 mg/L
2. Cl^- 3 mg/L
3. NO_2^- 5 mg/L
4. Br^- 10 mg/L
5. NO_3^- 10 mg/L
6. HCO_3^- 300 mg/L
7. HPO_4^{2-} 15 mg/L
8. SO_4^{2-} 15 mg/L

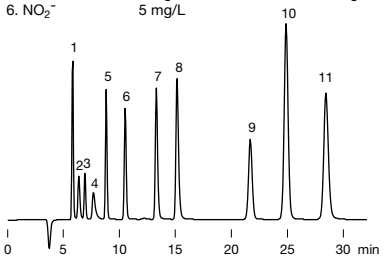


Column : **Shodex IC SI-90 4E**
Eluent : 1.8 mM Na_2CO_3 + 1.7 mM $NaHCO_3$ aq.
Flow rate : 1.5 mL/min
Detector : Suppressed conductivity
Column temp. : Room temp. (25 ˚C)

Anion analysis using SI-50 4E (suppressor method)

SI-50 4E is a high performance type of SI-90 4E. Acetic acid, formic acid, and methacrylic acid elute between F^- and Cl^-.
The carbonate system peak appears between NO_2^- and Br^- peaks.

Sample : 20 µL
1. F^- 2 mg/L
2. Acetic acid 10 mg/L
3. Formic acid 2 mg/L
4. Methacrylic acid 10 mg/L
5. Cl^- 3 mg/L
6. NO_2^- 5 mg/L
7. Br^- 10 mg/L
8. NO_3^- 10 mg/L
9. HPO_4^{2-} 15 mg/L
10. SO_4^{2-} 15 mg/L
11. Oxalic acid 15 mg/L

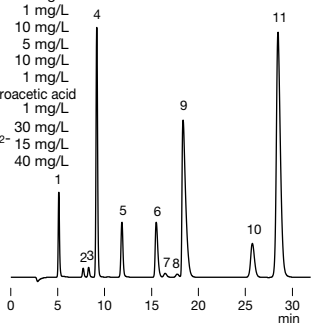


Column : **Shodex IC SI-50 4E**
Eluent : 3.2 mM Na_2CO_3 + 1.0 mM $NaHCO_3$ aq.
Flow rate : 0.7 mL/min
Detector : Suppressed conductivity
Column temp. : 25 ˚C

Oxyhalides and anions analysis using SI-52 4E (suppressor method)

SI-52 4E is a high resolution column offering 14,000 or higher theoretical plate number. It supports simultaneous analysis of oxyhalides and inorganic anions. It is recommended to set the column temperature at 45 °C.

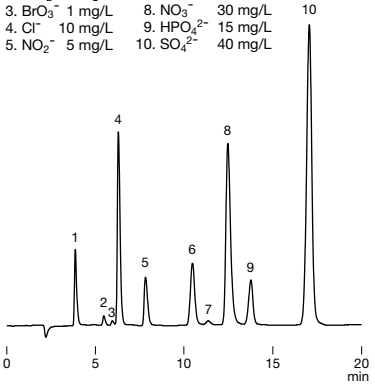
Sample : 50 µL
1. F^- 2 mg/L
2. ClO_2^- 1 mg/L
3. BrO_3^- 1 mg/L
4. Cl^- 10 mg/L
5. NO_2^- 5 mg/L
6. Br^- 10 mg/L
7. ClO_3^- 1 mg/L
8. Dichloroacetic acid 1 mg/L
9. NO_3^- 30 mg/L
10. HPO_4^{2-} 15 mg/L
11. SO_4^{2-} 40 mg/L



Column : **Shodex IC SI-52 4E**
Eluent : 3.6 mM Na_2CO_3 aq.
Flow rate : 0.8 mL/min
Detector : Suppressed conductivity
Column temp. : 45 ˚C

Rapid analysis of oxyhalides and anions using SI-35 4D (suppressor method)

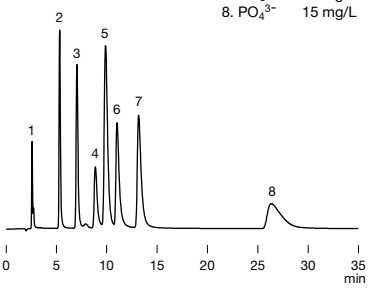
Sample : 20 µL
1. F^- 2 mg/L
2. ClO_2^- 1 mg/L
3. BrO_3^- 1 mg/L
4. Cl^- 10 mg/L
5. NO_2^- 5 mg/L
6. Br^- 10 mg/L
7. ClO_3^- 1 mg/L
8. NO_3^- 30 mg/L
9. HPO_4^{2-} 15 mg/L
10. SO_4^{2-} 40 mg/L



Column : **Shodex IC SI-35 4D**
Eluent : 2.0 mM Na_2CO_3 + 4.5 mM $NaHCO_3$ aq.
Flow rate : 0.6 mL/min
Detector : Suppressed conductivity
Column temp. : 45 ˚C

Anions and sulfite ion analysis using SI-36 4D (suppressor method)

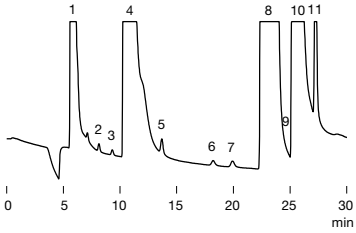
Sample : 25 µL
1. F^- 0.5 mg/L
2. Cl^- 3 mg/L
3. NO_2^- 5 mg/L
4. SO_3^{2-} 5 mg/L
5. SO_4^{2-} 10 mg/L
6. Br^- 10 mg/L
7. NO_3^- 10 mg/L
8. PO_4^{3-} 15 mg/L



Column : **Shodex IC SI-36 4D**
Eluent : 25 mM KOH aq.
Flow rate : 0.7 mL/min
Detector : Suppressed conductivity
Column temp. : 30 ˚C
Eluent source : Dionex EGC 500 KOH

Analysis of Oxyhalides in Artificial-Drinking Water According to EPA Method 300.1 (suppressor method)

Sample : 200 µL
(simulated drinking water)
1. F^- 1 mg/L
2. ClO_2^- 5 µg/L
3. BrO_3^- 5 µg/L
4. Cl^- 50 mg/L
5. NO_2^- 5 µg/L
6. ClO_3^- 5 µg/L
7. Br^- 5 µg/L
8. NO_3^- 10 mg/L
9. CO_3^{2-} 25 mg/L
10. SO_4^{2-} 50 mg/L
11. PO_4^{3-} 0.2 mg/L



Column : **Shodex IC SI-37 4D**
Eluent : (Gradient) KOH aq.
10 mM (0 to 21 min), 45 mM (21.01 to 40 min)
Flow rate : 0.5 mL/min
Detector : Suppressed conductivity
Column temp. : 30 ˚C
Eluent source : Dionex EGC 500 KOH

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