

# STAR-ION™ A300

## Suppressed Mode Anion Analysis for EPA Method 300

- Excellent separation of inorganic anions and some common organic anions
- High resolution and peak symmetry
- An alternative to Dionex IonPac AS4A

STAR-ION™ A300 is manufactured from substituted styrene-divinylbenzene copolymer coated with quaternary amine functionality. For critical anion chromatography, separation parameters such as water dip resolution from the fluoride peak, nitrate peak shape, as well as resolution of the fluoride, chloride and acetate peaks, STAR-ION A300 performs like a star.

### Material Specifications

Material Type	PSDVB with quaternary amine functionality
Mode of IC	Suppressed (optimized)
Max. Temperature	45 °C
Max. Pressure	1000 psi without guard column 1200 psi with guard column
Solvent Limitations	No organic solvents are recommended for use with STAR-ION



### STAR-ION Guard™ Cartridge System

- All material in contact with the mobile phase is constructed of PEEK
- Practical and simple design
- Extra-long PEEK fingertight fittings for virtually zero dead-volume connections



### Approximate Retention Times for Various Anions Using Star-Ion A300

Eluent: 3.6 mM Na<sub>2</sub>CO<sub>3</sub>

Flow Rate: 1.5 mL/min

Product	Ion	Concentration (µg/mL)	Approximate* Retention Time (min)
Sodium thiosulfate	thiosulfate	20	10.7
Sodium chromate	chromate	20	8.1
Sodium iodate	iodate	20	1.4
Sodium tetrafluorobromate	tetrafluorobromate	20	15.0
Sulfamic acid	sulfamate	20	1.6
Sodium iodide	iodide	20	11.3
Phosphorous acid	phosphite	20	4.2
Sodium sulfide nonahydrate	sulfide	100	10.7
Sodium chlorate	chlorate	20	6.1
Combination of 5 anions	F <sup>-</sup>	5	1.4
	Cl <sup>-</sup>	10	1.9
	NO <sub>2</sub> <sup>-</sup>	20	2.3
	Br <sup>-</sup>	20	3.0
	NO <sub>3</sub> <sup>-</sup>	20	3.6

Eluent: 0.4 mM Na<sub>2</sub>CO<sub>3</sub>

Flow Rate: 1.5 mL/min

Product	Ion	Concentration (µg/mL)	Approximate* Retention Time (min)
Sodium chlorate	chlorate	100	19.0
Sodium chlorite	chlorite	20	4.8
Sodium bromate	bromate	20	6.1
Formic acid	formate	20	3.7
Glycolic acid	glycolate	20	3.3
Sodium hypochlorite	hypochlorite	20	4.4
Hypophosphorous acid	hypophosphite	20	3.9
Phosphorous acid	phosphite	20	16.5
Combination of 5 anions	F <sup>-</sup>	5	3.0
	Cl <sup>-</sup>	10	4.5
	NO <sub>2</sub> <sup>-</sup>	20	5.9
	Br <sup>-</sup>	20	7.8
		NO <sub>3</sub> <sup>-</sup>	20

Eluent: 1.7 mM NaHCO<sub>3</sub>/1.8 mM Na<sub>2</sub>CO<sub>3</sub>

Flow Rate: 1.5 mL/min

Product	Ion	Concentration (µg/mL)	Approximate* Retention Time (min)
Sodium bromate	bromate	20	2.9
Formic acid	formate	20	1.8
Sodium chlorate	chlorate	20	7.5
Sodium chlorite	chlorite	20	2.2
Sodium hypochlorite	hypochlorite	20	2.8
Glycolic acid	glycolate	20	1.6
Hypophosphorous acid	hypophosphite	20	2.6
Sodium sulfide nonahydrate	sulfide	100	18.2
Phosphorous acid	phosphite	20	6.8
Combination of 7 anions	F <sup>-</sup>	5	1.5
	Cl <sup>-</sup>	10	2.1
	NO <sub>2</sub> <sup>-</sup>	20	2.7
	Br <sup>-</sup>	20	3.4
	NO <sub>3</sub> <sup>-</sup>	20	4.2
	PO <sub>4</sub> <sup>-3</sup>	30	7.0
	SO <sub>4</sub> <sup>-2</sup>	20	8.3



Retention times listed are only approximate. Retention will vary with changes in pH, eluent composition, temperature and system. Data reflect one standard only per injection.

\* Suppressed mode ion columns.

IonPac AS4A and Dionex are trademarks of Dionex Corp. Phenomenex has no affiliation with Dionex.

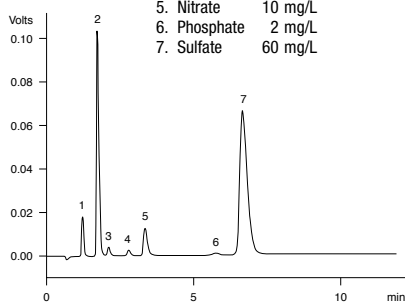
If STAR-ION™ A300 does not produce at least equivalent separation as compared to a competing column of a similar type\*, simply send us comparative data with the STAR-ION™ A300 column within 45 days for a FULL REFUND.

App ID 5604

## EPA Method 300

**Column:** STAR-ION A300  
**Dimensions:** 100 x 4.6 mm  
**Part No.:** 00D-4090-E0-B0  
**Flow Rate:** 2.0 mL/min  
**Eluent:** 1.7 mM NaHCO<sub>3</sub>/  
 1.8 mM Na<sub>2</sub>CO<sub>3</sub>  
**Detection:** Suppressed Conductivity  
**Injection Volume:** 20 µL  
**Sample:**

1. Fluoride 2 mg/L
2. Chloride 20 mg/L
3. Nitrite 2 mg/L
4. Bromide 2 mg/L
5. Nitrate 10 mg/L
6. Phosphate 2 mg/L
7. Sulfate 60 mg/L

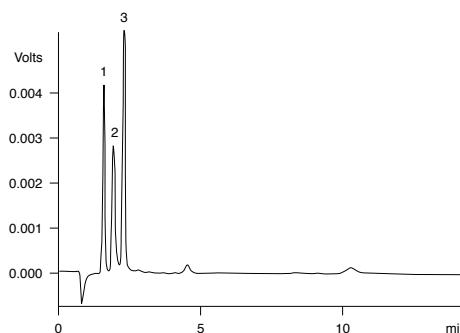


App ID 5606

## Fluoride, Acetate and Chloride Ion

**Column:** STAR-ION A300  
**Dimensions:** 100 x 4.6 mm  
**Part No.:** 00D-4090-E0-B0  
**Flow Rate:** 2.0 mL/min  
**Eluent:** 0.4 mM Na<sub>2</sub>CO<sub>3</sub>  
**Detection:** Suppressed Conductivity  
**Injection Volume:** 20 µL  
**Sample:**

1. Fluoride 2 mg/L
2. Acetate 35 mg/L
3. Chloride 4 mg/L

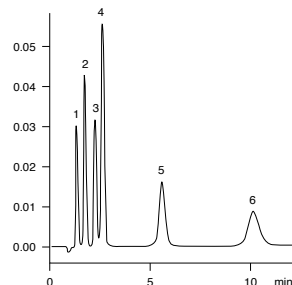


App ID 5613

## Halogen Anions

**Column:** STAR-ION A300  
**Dimensions:** 100 x 4.6 mm  
**Part No.:** 00D-4090-E0-B0  
**Flow Rate:** 1.5 mL/min  
**Detection:** Suppressed Conductivity  
**Pressure:** 620 psi  
**Injection Volume:** 20 µL  
**Eluent:** 3.6 mM Na<sub>2</sub>CO<sub>3</sub>  
**Sample:**

1. Fluoride 10 ppm
2. Chloride 20 ppm
3. Bromide 20 ppm
4. Bromate 20 ppm
5. Chlorate 20 ppm
6. Iodide 20 ppm

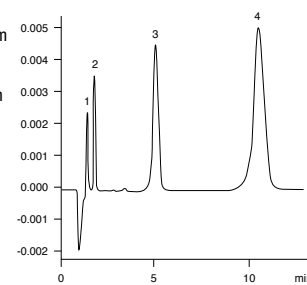


App ID 5610

## Anions in Chromate Plating Bath

**Column:** STAR-ION A300  
**Dimensions:** 100 x 4.6 mm  
**Part No.:** 00D-4090-E0-B0  
**Flow Rate:** 1.5 mL/min  
**Detection:** Suppressed Conductivity  
**Pressure:** 620 psi  
**Injection Volume:** 20 µL  
**Eluent:** 3.6 mM Na<sub>2</sub>CO<sub>3</sub>  
**Sample:**

1. Fluoride 0.5 ppm
2. Chloride 1 ppm
3. Sulfate 5 ppm
4. Chromate 20 ppm



## ORDERING INFORMATION

### Suppressed Mode Anion Analysis for EPA Method 300

Part No.	Description	Dimensions (mm)	Unit	Price
00D-4090-E0-BV	STAR-ION A300 Anion column (PEEK)	100 x 4.6	ea	
AQ0-3111	STAR-ION Guard cartridge holder with 2 PEEK long-nut fittings		ea	
KH0-3112	STAR-ION Anion guard cartridge	10 x 4.6	3/pk	
AL0-3420	STAR-ION A300 Test Mix		ea	
AQ0-3351	PEEK 1/4" - 28 to 10-32 Adapter to connect STAR-ION A300 analytical column to Dionex IC systems (use 2 fittings, one for each end of column)		ea	
AQ0-1388	Replacement PEEK long-nut fitting		ea	
ATO-1107	PEEK capillary tubing 1/16" OD x 0.010" D x 5' L		ea	
ATO-1110	Polymer tubing cutter		ea	



See p. 372 for our selection of reference books for Separation Science.