



The wise choice

Ion Chromatography



Ion chromatography is one of the most used methods for anion or cation traces. It is a basic and essential technique in water and environmental analysis.

Ion chromatography is based on the use of filled columns with ion-exchange resins. The resins inside the column interact with the ionic samples; the ions present are separated due to the different interactions.

In this technique, the most common detectors are the amperometric, conductimetric and UV, needing different features for other HPLC techniques.

The ionic chromatograms give qualitative and quantitative information (retention time identifies the ion and the peak area indicates the quantity) of the ionic compounds analysed.

Ion chromatography is suitable for analysing:

- ▶ **Inorganic and organic anions:** Fluorides, chlorides, nitrites, bromides, nitrates, phosphates, sulphates, bromates, chlorites, chlorates and acetic, citric, tartaric, lactic, sorbic, benzoic acid
- ▶ **Sugars and polyalcohols:** Monosaccharides, disaccharides, oligosaccharides, polysaccharides.
- ▶ **Cations:** Sodium, ammonium, potassium, calcium, magnesium...

Ion chromatography is widely used in drinking and mineral waters, beverages, meat products and vegetables and baby food, among others.

Scharlab presents its new line of columns KromaPhase Ionic, a line of columns for anionic and cationic separations.



Kromaphase Ionic Columns

Description	Packaging	Art. No.
Kromaphase Ionic SC1HS	1 unit	SCIC-C0001
Kromaphase Ionic SC300BHS	1 unit	SCIC-C0002
Kromaphase Ionic SC COLA	1 unit	SCIC-C0003
Kromaphase Ionic SC1 Fast Analysis	1 unit	SCIC-C0004
Kromaphase Ionic SC1 SS	1 unit	SCIC-C0005
Kromaphase Ionic SC ION 120 (Non-suppressed IC)	1 unit	SCIC-C0006
Kromaphase Ionic SC ION 120 PEEK (Non-suppressed IC)	1 unit	SCIC-C0007
Kromaphase Ionic SC AN300H (for EPA Method 300.a)	1 unit	SCIC-C0008
Kromaphase Ionic SC300 (for EPA Method 300.a)	1 unit	SCIC-C0009
Kromaphase Ionic SC2 Fast Analysis	1 unit	SCIC-C0010
Kromaphase Ionic SC1	1 unit	SCIC-C0011
Kromaphase Ionic SC1SC	1 unit	SCIC-C0012
Kromaphase Ionic SC2	1 unit	SCIC-C0013
Kromaphase Ionic SC300B (for EPA Method 300.b)	1 unit	SCIC-C0014
Kromaphase Ionic SC2 HC, High Capacity	1 unit	SCIC-C0015
Kromaphase Ionic SC3 Metal Analysis Column	1 unit	SCIC-C0016

Kromaphase Ionic Guard Cartridge

Description	Packaging	Art. No.
Kromaphase Ionic SC Guard Cartridge (SC1 and SC300 compatible)	3 units	SCIC-GC001
Kromaphase Ionic SC1 Guard Cartridge	3 units	SCIC-GC002
Kromaphase Ionic SC2 Guard Cartridge	3 units	SCIC-GC003
Kromaphase Ionic SC300B Guard Cartridge	3 units	SCIC-GC004
Kromaphase Ionic SC2 HC Guard Cartridge	3 units	SCIC-GC005
Kromaphase Ionic SC AN Guard Column (AN1 and AN300 compatible)	1 unit	SCIC-GC006
Kromaphase Ionic SC Sep SC1 Guard Column	1 unit	SCIC-GC007
Kromaphase Ionic SC2 Guard Column	1 unit	SCIC-GC008
Kromaphase Ionic SC 300B Guard Column	1 unit	SCIC-GC009
Kromaphase Ionic SC2 HC Guard Column	1 unit	SCIC-GC010
Kromaphase Ionic SC ION 120 Cartridge	3 units	SCIC-GC011
Kromaphase Ionic SC ION 120 Cartridge	3 units	SCIC-GC012
Kromaphase Ionic SC3 Guard Cartridges	2 units	SCIC-GC013
Kromaphase Ionic SC ION 120 Guard Kit (SS Holder + 2 PEEK Cartridges)	1 unit	SCIC-GC014
Kromaphase Ionic SC Holder For All 3.0x10mm Guard Cartridges	1 unit	SCIC-GC015
Kromaphase Ionic SC Holder Replacement Frits	3 units	SCIC-GC016
Kromaphase Ionic SC Holder Replacement Frits	20 units	SCIC-GC017

Kits Columns + Guard Cartridge

Description	Packaging	Art. No.
Kromaphase Ionic SC300 Column Kit (includes column, guard column, coupler)	1 unit	SCIC-KT001
Kromaphase Ionic SC300 Cartridge Kit (includes column, guard holder, cartridges, coupler)	1 unit	SCIC-KT002
Kromaphase Ionic SC1 Column Kit (includes column, guard column, coupler)	1 unit	SCIC-KT003
Kromaphase Ionic SC1SC Column Kit (includes column, guard column, coupler)	1 unit	SCIC-KT004
Kromaphase Ionic SC2 Column Kit (includes column, guard column, coupler)	1 unit	SCIC-KT005
Kromaphase Ionic SC300B Column Kit (includes column, guard column, coupler)	1 unit	SCIC-KT006
Kromaphase Ionic SC2 HC Column Kit (Includes column, guard column, coupler)	1 unit	SCIC-KT007
Kromaphase Ionic SC1 Cartridge Kit (includes column, guard holder, cartridges, coupler)	1 unit	SCIC-KT008
Kromaphase Ionic SC1SC Cartridge Kit (includes column, guard holder, cartridges, coupler)	1 unit	SCIC-KT009
Kromaphase Ionic SC2 Cartridge Kit (includes column, guard holder, cartridges, coupler)	1 unit	SCIC-KT010
Kromaphase Ionic SC300B Cartridge Kit (includes column, guard holder, cartridges, coupler)	1 unit	SCIC-KT011
Kromaphase Ionic SC2 HC Cartridge Kit (includes column, guard cartridges, coupler, holder)	1 unit	SCIC-KT012

Accessories

Description	Packaging	Art. No.
Kromaphase Ionic SC Column Replacement Frits PEEK	5 units	SCIC-00001
Kromaphase Ionic SC Column Replacement Frits PEEK	10 units	SCIC-00002
Kromaphase Ionic SC Guard Disc	5 units	SCIC-00003
Kromaphase Ionic SC3 Guard Kit	1 unit	SCIC-00004

Scharlau Kromaphase Ionic, 15 phases available

► SC1 Phase

Mainly used for F⁻ determination. Very good selectivity of the main 7 anions for drinking water. The SC1 phase can be coupled to ICP-MS equipment for Arsenic, Chromium, Selenium and other toxic metals.

► SC1HS Phase

The SC1HS phase has been designed for used like the SC1 phase but 80% faster.

► SC1SS Phase

Excellent phase for fluorides quantification in water.

► SC1FA Phase

Column with same selectivity as SC1 column, just a shorter column but offers better resolution than the SC1HS phase.

► SC ION120 Phase

Completely different material than the SC1 series, used for non-suppressed IC only, salicylic acid is the eluent, sulphate elutes in under 12 minutes, PEEK and SS (most common) formats are both offered and are solvent compatible.

► SC300 Phase

Column designed for US EPA drinking water method 300.a. Sulphates are eluted in 8 minutes approximately.

► SC300H Phase

Column very similar to the SC300 column but with higher capacity.

► SC300B Phase

Column specially designed for US EPA drinking water method 300.b for oxyhalides. Unique selectivity.

► SC300BHS Phase

Same as SC300B but 80% faster. For simple assays. Solvent compatible.

► SC1SC Phase

It is a solvent compatible SC1 column, but selectivity is not identical to the SC1. Easy to clean. Fast elution times.

► SC2 Phase

Column with higher capacity than SC1 column but is also solvent compatible. Quick elution of sulphates. Easy to clean.

► SC2 FA Phase

Faster than SC2 column for simple samples. Solvent compatible and easy to clean.

► SC2 HC Phase

Very high capacity anion exchange column, used for R&D and oxy-halides, perchlorate, solvent compatible and easy to clean.

► SC3 Phase

Column manufactured with very high capacity material, ideal for divalent cations. Solvent compatible.

► SC COLA Phase

Specially designed for cola drink analysis. Stable anion analysis even with 1000's of injections of pure cola. Caramel additive does not affect separation unlike traditional anion exchange columns.

As any instrumental technique, Ionic Chromatography needs standards to calibrate and check the equipment.

The ionic chromatography standards from Scharlab are manufactured according to ISO 17025 and 17034 requirements. Scharlab offers a wide range of monoanionic and monocationic standards, reliable and accurate.

The multianionic or multicationic standards are offered as a custom-made product, in order to fit at the customer requirements.

Do not hesitate to contact: helpdesk@scharlab.com to receive more information.

Description	Packaging	Art. No.
Ammonium, standard solution 1000 mg/l NH_4^+ for IC (NH_4Cl in H_2O)	100 ml	AM02360100
Barium, standard solution 1000 mg/l Ba^{2+} for IC (BaCO_3 in H_2O)	100 ml	BA00120100
Bromide, standard solution 1000 mg/l Br for IC (KBr in H_2O)	100 ml	BR01310100
Calcium, standard solution 1000 mg/l Ca^{2+} for IC (CaCl_2 in H_2O)	100 ml	CA01780100
Cyanide, standard solution 1000 mg/l CN^- for IC (KCN in 0,1% KOH)	100 ml	CI00210100
Chloride, standard solution 1000 mg/l Cl^- for IC (NaCl in H_2O)	100 ml	CL02290100
Chromium, standard solution 1000 mg/l Cr^{6+} for IC ($(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ in H_2O)	100 ml	CR01860100
Fluoride, standard solution 1000 mg/l F^- for IC (NaF in H_2O)	100 ml	FL01410100
Phosphate, standard solution 1000 mg/l PO_4^{3-} for IC ($\text{NH}_4\text{H}_2\text{PO}_4$ in H_2O)	100 ml	FO01120100
Glycolate, standard solution 1000 mg/l $\text{C}_2\text{H}_3\text{O}_3^-$ for IC ($\text{C}_2\text{H}_4\text{O}_3$ in H_2O)	100 ml	GL01310100
Lactate, standard solution 1000 mg/l $\text{CH}_3\text{CH}(\text{OH})\text{COO}^-$ for IC ($\text{CH}_3\text{CH}(\text{OH})\text{COONa}$ in H_2O)	100 ml	LA00480100
Lithium, standard solution 1000 mg/l Li^+ for IC (Li_2CO_3 in H_2O)	100 ml	LI00620100
Magnesium, standard solution 1000 mg/l Mg^{2+} for IC (MgCl_2 in H_2O)	100 ml	MA00130100
Nitrite, standard solution 1000 mg/l NO_2^- for IC (NaNO_2 in H_2O)	100 ml	NI01230100
Nitrite, standard solution 1000 mg/l NO_3^- for IC (NH_4NO_3 in H_2O)	100 ml	NI01920100
Potassium, standard solution 1000 mg/l K^+ for IC (KCl in H_2O)	100 ml	PO01070100
Perchlorate, standard solution 1000 mg/l ClO_4^- for IC (KClO_4 in H_2O)	100 ml	PO03210100
Sodium, standard solution 1000 mg/l Na^+ for IC (NaCl in H_2O)	100 ml	SO00070100
Sulphate, standard solution 1000 mg/l SO_4^{2-} for IC (Na_2SO_4 in H_2O)	100 ml	SU01030100
Iodide, standard solution 1000 mg/l I ⁻ for IC (KI in H_2O)	100 ml	YO00770100

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