



XAMS

Xenoic[®] Anion Membrane Suppressor

Efficient - Maximum signal-to-noise ratio

Flexible - Fits every ion chromatography system

Robust - Designed for years of operation



Designed for accurate analysis results in every laboratory

XAMS provides efficient background suppression and ensures maximum signal-to-noise ratio during years of operation

Routine trace level analysis

Benefit from a dramatic increase in signal-to-noise ratio while performing analysis of typical anions with conductivity on any ion chromatography (IC) system. The efficient membrane of the XAMS minimize background and noise by converting highly conductive aqueous IC eluents to neutral solutions using the principle of chemical suppression. At the same time, the XAMS maximize sensitivity of the separated anions by replacing the original eluent counter ions with more conductive hydronium ions. This boost in signal-to-noise ratio enables routine trace level analysis of many anions in the low ppm (mg/L) and ppb ($\mu\text{g/L}$) range.

XAMS

Xenoic[®] anion membrane suppressor

XAMS is an efficient and robust chemical membrane suppressor that is easy to use. With XAMS in your ion chromatography system you will reach maximum sensitivity and minimum background for numerous analyses using eluents containing either hydroxide or carbonate. The suppressor accomplish this by removing eluent cations and replacing them with hydronium ions (protons), thereby neutralizing the eluent. The suppressor is thus connected downstream of the separation column, before the detector.

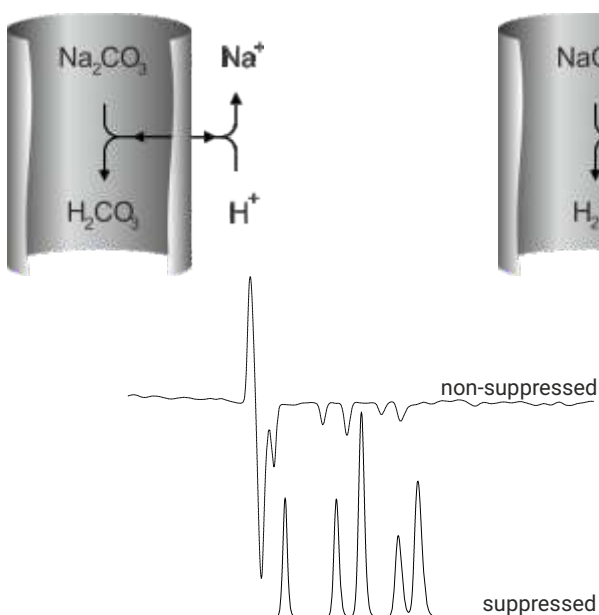
Months of unattended operation

XAMS regenerated by ASUREX constitutes a powerful chemical suppression system without any need to prepare regeneration solutions on a regular basis. Instead the ASUREX-AR1 cartridge provide hydronium ions (protons) for an unattended operation of the XAMS suppressor for several months. Efficient suppression and ultra-low background levels are ensured by the ultra-pure ASUREX-AS1 solution. The background reach close to theoretical levels for most eluents in the typical concentration range and at most flow rates used for anion chromatography columns.

ASUREX

Automatic suppressor regenerator by Xenoic[®]

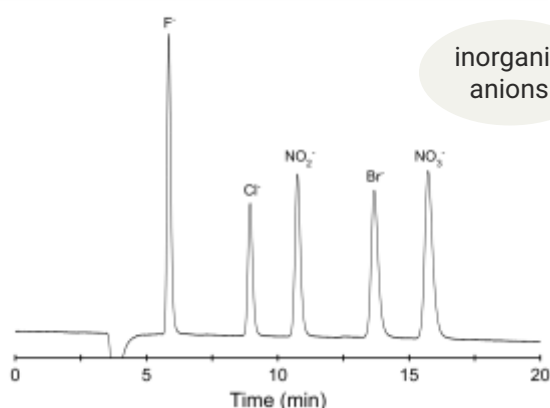
The ASUREX suppressor regenerator is designed to provide optimum conditions for the XAMS anion membrane suppressor. Its external regeneration cartridge holds enough protons for months of unattended operation of the XAMS. The continuously circulated ultra-pure AS1 solution acts as a shuttle, delivering protons from the AR1 cartridge to the XAMS suppressor, while returning eluent cations back to the cartridge for permanent deposition.





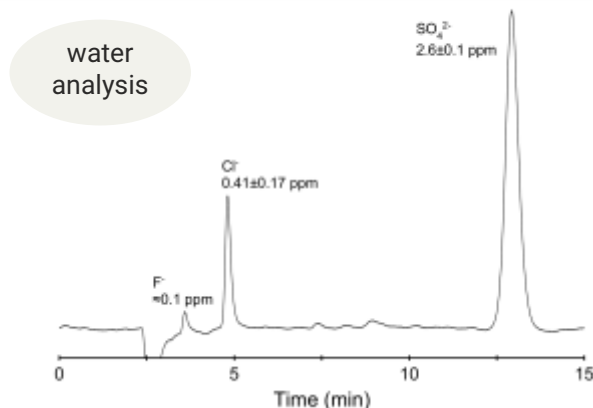
Fits many brand columns and systems

The setup of XAMS & ASUREX is flexible and easy to install with many brands of columns and instruments



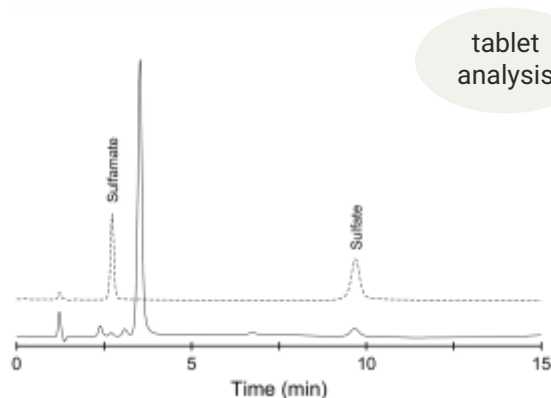
Metrohm instrument with Metrosep column

Separation of inorganic anions on a Metrosep A Supp 5 column (250×4 mm) using an eluent containing 1.0 mM Na₂CO₃ and 3.2 mM NaHCO₃ in water pumped at 0.7 mL/min at 24 °C. Background reduced to ~18 μS/cm by XAMS suppressor with ASUREX automatic regenerator. Eluent pumping and conductivity detection by Metrohm 761 Compact IC. Injection of 20 μL of F, Cl⁻ (2 mg/L), NO₂⁻ (5 mg/L), Br⁻, NO₃⁻ (10 mg/L) in water. Metrosep is a trademark of Metrohm AG.



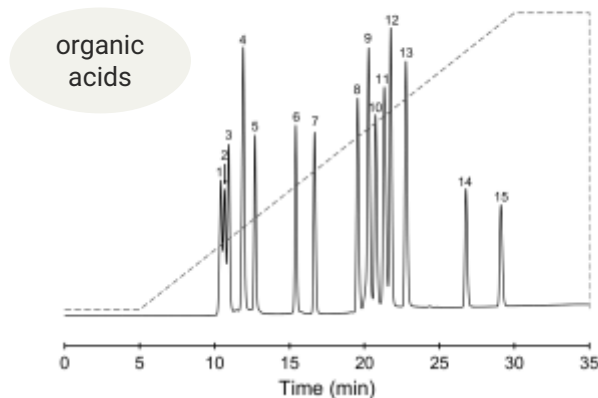
Hitachi instrument with Shodex column

Quantitative analysis of anions in bottled water using a Shodex IC SI-90 4E column (250×4 mm) and an eluent containing 1.7 mM NaHCO₃ and 1.8 mM Na₂CO₃ in water pumped at 1.0 mL/min at 25 °C. Background reduced to ~13 μS/cm by XAMS suppressor with ASUREX automatic regenerator. Eluent pumping and conductivity detection by a passivated Hitachi LaChrom Elite system. Injection of 50 μL sample. Linear six-point calibration curves 0.2-7 mg/L (ppm) gave the following concentrations; Cl⁻ 0.41±0.17 mg/L and SO₄²⁻ 2.6±0.1 mg/L (95% confidence interval). F was estimated to 0.1 mg/L, but this was below the calibration range. Shodex is a trademark of Resonac Group.



Waters instrument with Hamilton column

Analysis of limit of sulfamate and sulfate in Topiramate tablets according to the specific tests defined in USP 41 (monograph 2018:4145). Ion chromatography separation on a USP class L47 column (Hamilton PRP-X100, 150×4.6 mm, 5 μm) using an eluent containing 97.5% of aqueous 0.8 g/L (5.8 mM) p-hydroxybenzoic acid at pH 9.4 with 2.5% methanol, pumped at 1.5 mL/min at 30 °C. Background reduced to ~123 μS/cm by XAMS suppressor with ASUREX automatic regenerator. A Waters ACQUITY Arc system with modules QSM-R and FTN-R were used together with a Waters 432 conductivity detector. Injection of 70 μL of ground tablet powder (1 g) that had been diluted in mobile phase (50 mL), sonicated and filtered through 0.45 μm PES (solid line), or of a standard with 15 ppm sulfamate and 15 ppm sulfate in eluent (broken line, offset by 50 μS/cm).

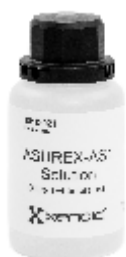


Shimadzu instrument with Dionex IonPac column

Hydroxide gradient ion chromatography separation of organic acids and inorganic anions on an IonPac AS11-HC column (250×4 mm) using an eluent containing 1-50 mM NaOH in water pumped at 1.0 mL/min at 30 °C from an EQAX-B1 eluent bottle equipped with an EQAX-TC1 trap cartridge for carbon dioxide removal. Background reduced by XAMS suppressor with ASUREX automatic regenerator keeping the background increase <1.5 μS/cm from start to finish. An inert Shimadzu Prominence system with modules CMB-20A, 2x LC-20Ai, DGU-203R, SIL-20AC, CTO-20A, and CDD-10Avp was used. Injection of 50 μL of fluoride (1), lactate (2), glycolate (3), formate (4), pyruvate (5), chloride (6), nitrite (7), malate (8), tartrate (9), bromide (10), citrate (11), sulfate (12), oxalate (13), phosphate (14), citrate (15), at concentrations ranging from 4 to 40 mg/L in water, giving signals up to 50 μS/cm. Dionex and IonPac are trademarks of Thermo Scientific Inc.



ASUREX-AR1
cartridges



ASUREX-AS1
solution



XAMS
suppressor



ASUREX-A200
regenerator

Product	Description	Exchange interval*	Compatible with**
1125-100	XAMS Membrane suppressor	12-48 months*	(1.50609.0001)
1125-200	XAMS-HC High-capacity suppressor	12-48 months*	(1.50610.0001)
1810-200	ASUREX-A200 Regenerator		(1.50611.0001)
1810-911	ASUREX-AR1 Cartridge	6-24 months*	(1.50613.0001)
1810-921	ASUREX-AS1 Solution	6-24 months*	(1.50616.0100)

Full product portfolio available at diduco.com

*Product lifetime depends on the analysis situation. Dirty samples will contaminate the XAMS suppressor and reduce its lifetime. Strong eluents, gradient separations, fast flow rates and over night eluent pumping will consume the capacity of the ASUREX-AR1 cartridge faster and reduce its lifetime. The ASUREX-AS1 solution is typically exchanged with the cartridge.

**All items are fully compatible with the discontinued SeQuant brand items SAMS, CARS & ULB-P previously manufactured by Merck KGaA and sold by Sigma Aldrich and Merck Millipore.

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