Ω Metrohm

IC Application Note No. N-41

Title:	Borate, chloride and sulfate in one single run applying a step gradient

Summary:	Determination of borate, chloride with direct conductivity detection (exhausted MSM) after the introduction of the fresh MSM unit and after the eluent change sulfate is analyzed with conductivity detection after chemical suppression.

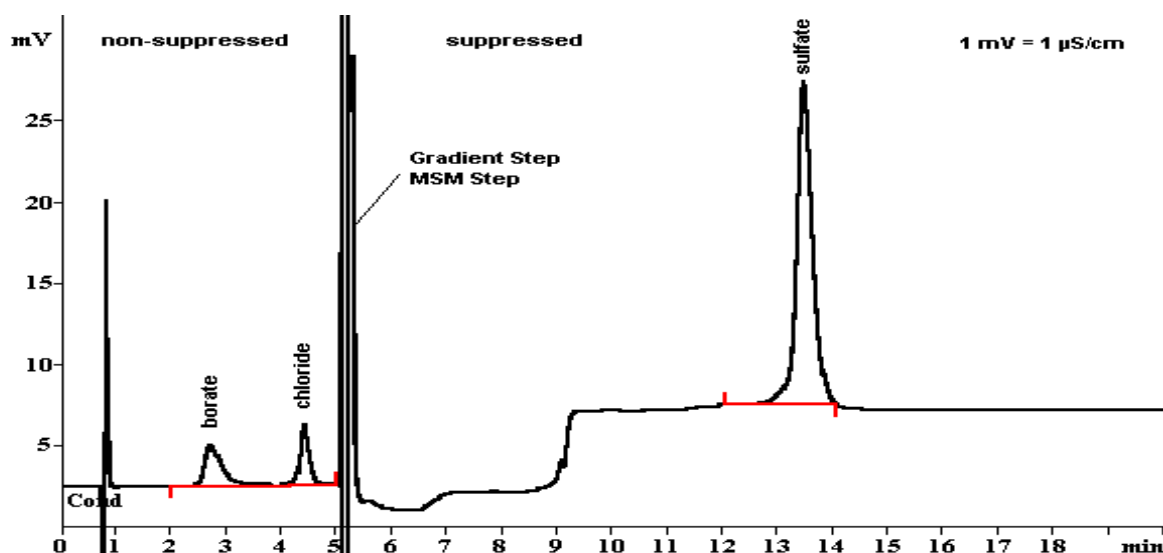| Sample:	Galvanic nickel bath (synthetic)
Sample Preparation:	Dilution, injection through cation exchanger cartridge or 793 IC Sample Prep Module

Column:	6.1005.100 Phenomenex StarIon A300
Eluent:	A: 3.2 mmol/L sodium hydroxide B: 3.2 mmol/L sodium hydroxide, 1.0 mmol/L sodium carbonate
Suppressor:	MSM (MSM, 50 mmol/L H_2SO_4)
Flow:	1.5 mL/min
Injection Volume:	20 µL

Results:	Borate mg/L	Chloride mg/L	Sulfate mg/L
injected	40	20	20

1 … 5.2 min.: non-suppressed, Eluent A, polarity -. Eluent runs through the exhausted MSM unit.
5.2 min.: Eluent B, suppressor step
5.2 onwards: polarity +, suppression active. Next injection after breakthrough of the MSM unit (total run time approx. 55 min.)