

IC Application Note No. S-153

Title: Chloride in 65% nitric acid using column switching

Summary: Determination of chloride in concentrated nitric acid using anion chromatography with conductivity detection and chemical suppression.

Sample: Concentrated nitric acid

Sample preparation: Dilution 1 : 25

Column 1: 6.1006.430 Metrosep A SUPP 4 (2 x)

Column 2: 6.1006.430 Metrosep A SUPP 4

Eluent 1: 20 mmol/L sodium hydroxide

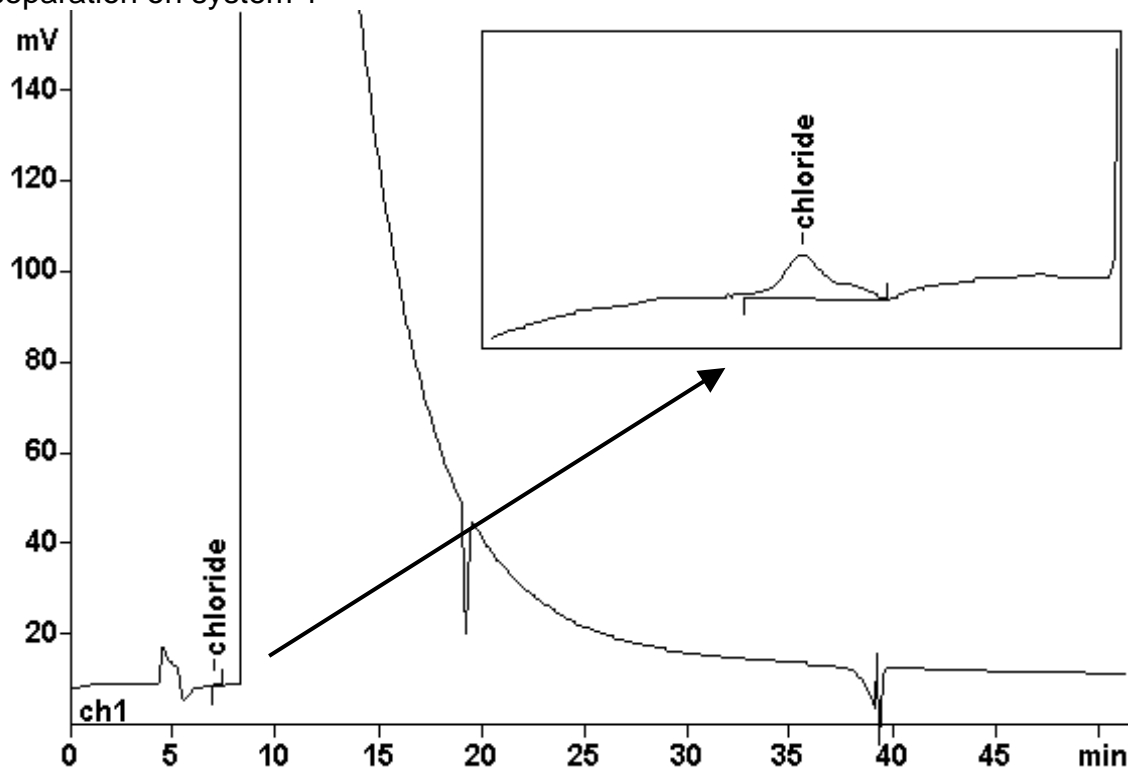
Eluent 2: 1.0 mmol/L sodium carbonate
4.0 mmol/L sodium hydrogencarbonate

Suppressor: MSM (50 mmol/L H₂SO₄)

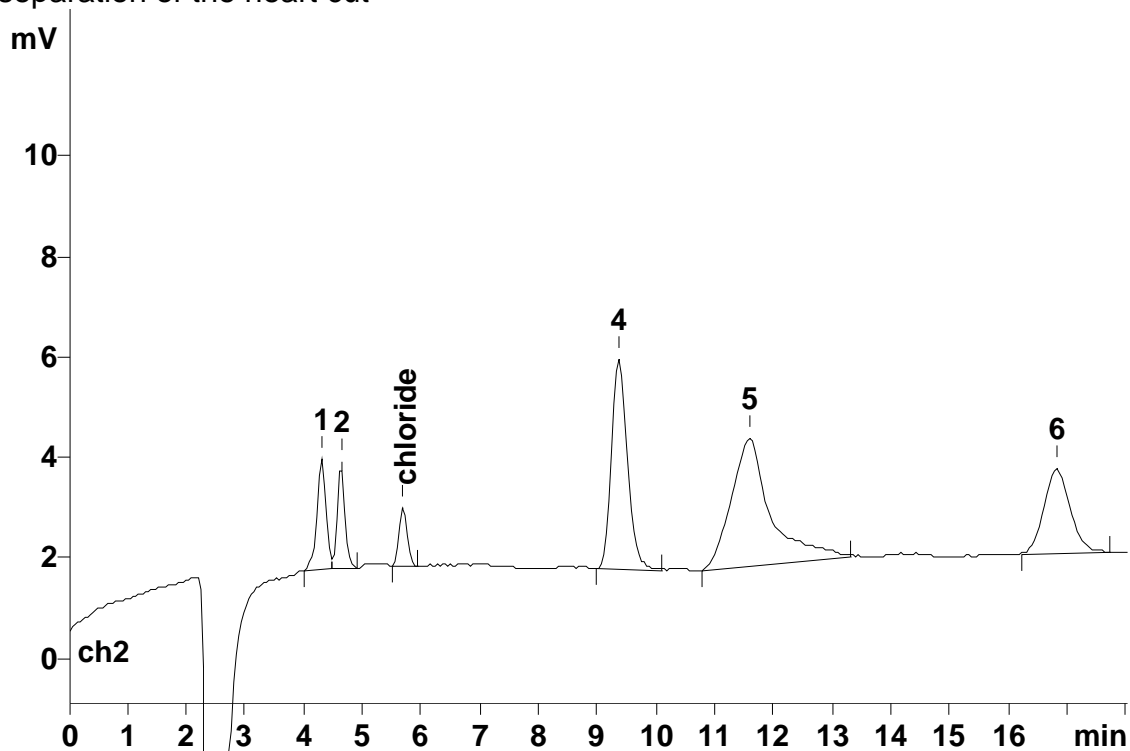
Flow: 1.0 mL/min

Injection Volume: 20 µL (1); preconcentrator column (2)

Pre-separation on system 1



Final separation of the heart cut



Results:	Chloride mg/L
	2.04

The remaining components have not been quantified

Comment: The heart cut is done by running the eluent from system 1 onto the preconcentrator column of system 2. The cutting period was from 6.8 to 7.5 minutes after injection. Compared to the pre-separation, the final chromatogram shows a much better peak shape for chloride yielding a much more reliable result.