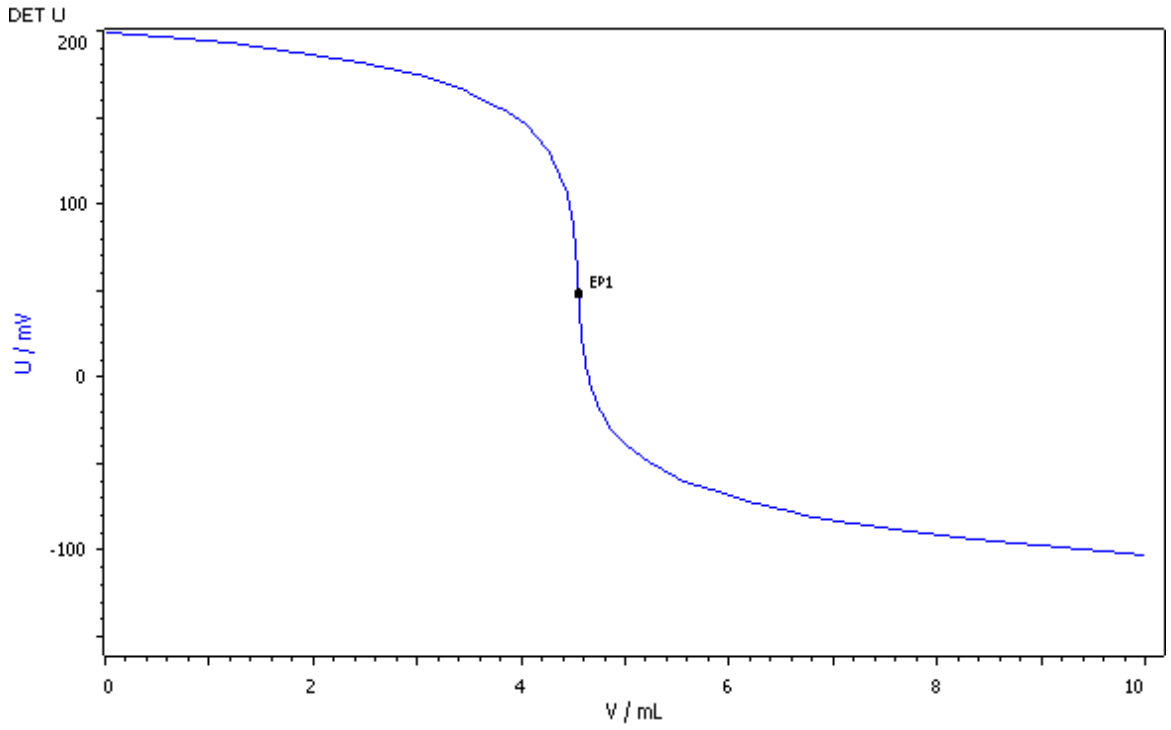
Titration Application Note T–119

Fully automated determination of chloride (NaCl) in meat bouillon



The automated system determines the chloride content in meat bouillon. The high degree of automation (e.g., automated acid addition as well as automated titer determination) minimizes errors and guarantees an outstanding reproducibility.

Metrohm

Method description

Sample

One instant cube of approx. 10 g dry meat bouillon. The cube contains approx. 50% salt.

Sample preparation

Approx. 10 g sample is dissolved in approx. 500 mL hot dist. H_2O, allowed to cool down, made up to 1 liter with distilled H_2O, and mixed.

Instruments

814 USB Sample Processor	2.814.0030
Sample rack 12 × 250 mL	6.2041.310
Sample beaker glass 250 mL	6.1432.320
Macro titration head 6 × NS14 / 3 × NS6	6.1458.010
802 Stirrer incl. propeller	2.802.0020
843 Pump Station Peristaltic	2.843.0150
905 Titrando	2.902.0010
iConnect with 3 m cable	6.9921.223
800 Dosino (3×)	2.800.0010
2 mL Dosing unit (KCl)	6.3032.120
5 mL Dosing unit (HNO_3)	6.3032.150
10 mL Dosing unit (titrant)	6.3032.210
Brown glass bottle GL45 1L	6.1608.023
Controller cable	6.2151.000

Electrodes

iAg Titrode with Ag_2S coating	6.0470.300S

Solutions

Titrant	c($AgNO_3$) = 0.1 mol/L, if possible this solution should be bought from a supplier.
Acidifying solution	c(HNO_3) = 2 mol/L

Analysis

Pipette 5 mL sample solution into a titration beaker and place it on the rack. Once the series is started, 5 mL c(HNO_3) = 2 mol/L are automatically added to the sample. Approx. 60 mL dist. water are added by rinsing pump and mixed. Then, the solution is automatically titrated with c($AgNO_3$) = 0.1 mol/L.

Parameters

Mode	DET U
Meas. point density	4
Min. increment	10 µL
Max. increment	off mL
Signal drift	50 mV/min
Max. waiting time	26 s
EP criterion (ERC)	5
EP recognition	all

Results

Parameter	Mean (n = 10)	Rel. standard deviation in %
Titer	0.9949	0.08
w(NaCl)	46.97%	0.45