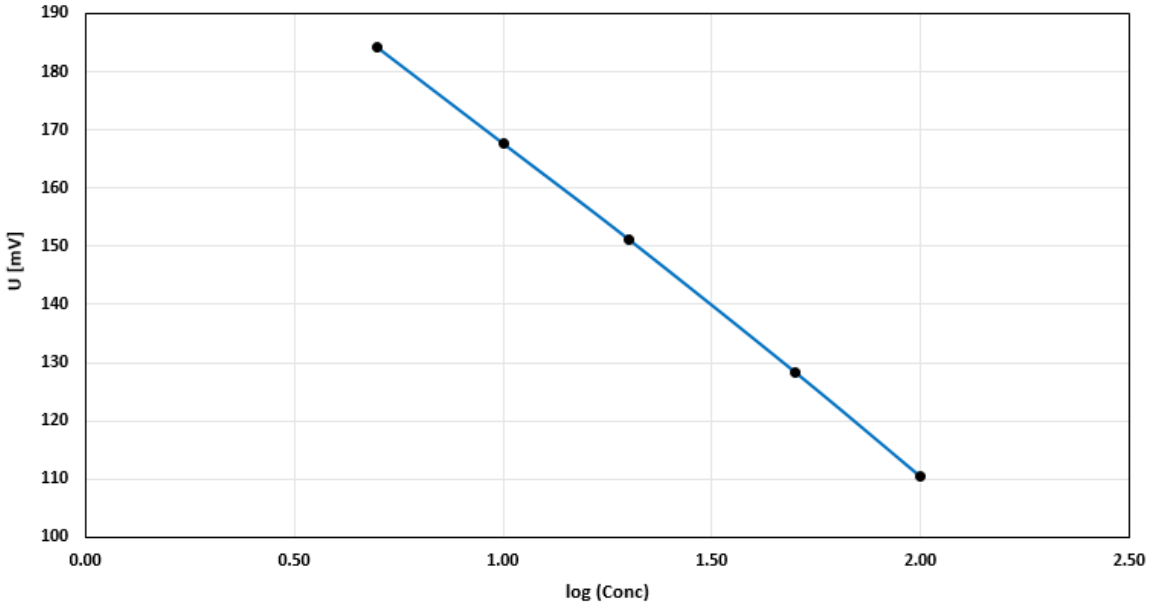
ISE Application Note I-015

Determination of the chloride content in dye



In the synthesis of certain dyes, sodium chloride is a byproduct. The content of chloride is therefore an important parameter. This application note describes the determination of the chloride content in dye by standard addition using a Cl^- ion-selective electrode.

Metrohm

Method description

Sample

Dye powder

Sample preparation

1.3 g of sample is dissolved in 250 mL deionized water.

Configuration

781 pH/Ion Meter	2.781.0010
865 Dosimat plus	2.865.0010
801 Stirrer with stand	2.801.0040
Exchange unit 10 mL, std. solution	6.3026.210
Remote Box MSB	6.2148.010
Cable Dosimat Plus (9p) - 781 (25p)	6.2141.350
Electrode cable / 1 m / F	6.2104.020
Strand / 1 m / 2 x B	6.2106.020
Stirring bar / 30 mm	6.1903.060
Ion-selective electrode, Cl	6.0502.120
LL ISE Reference, Electrolyte $c(KNO_3)$ = 1 mol/L	6.0750.100

Solutions

Standard solution	$c(Cl^-)$ = 0.1000 mol/L = $\beta(Cl^-)$ = 3545.3 mg/L, if possible this solution should be bought from a supplier.

Analysis

25 mL sample solution is pipetted into a titration vessel. While stirring, a standard addition with four additions is performed using $c(Cl^-)$ = 0.1 mol/L.

Parameters

Mode	Std.Add.
Signal drift	1.0 mV/min
Stirring rate	6
Sample size	25 mL
V total	25 mL
Factor	1.0
Dos rate	fast
Addition	Auto dos
Stop volume	4.0 mL
No. of additions	4
Increment 1	0.5 mL
Increment 2	1.0 mL
Increment 3	1.0 mL
Increment 4	1.0 mL

Results

Mean value / Cl^- (n = 3)	s(rel) / %
2003 mg/kg	3.1

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