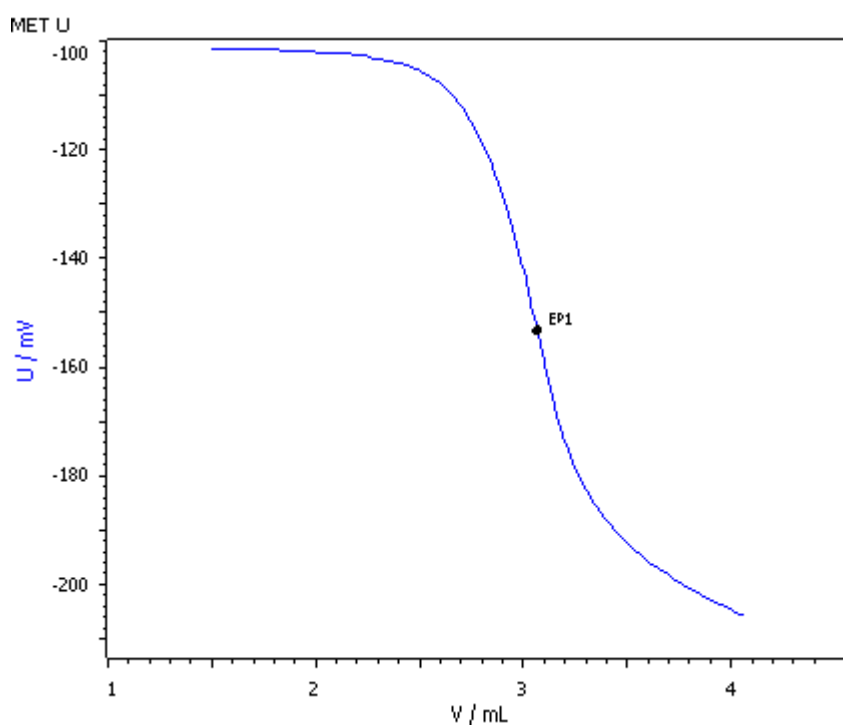


# Fully automated determination of calcium in milk



This Application Note describes the fully automated complexometric determination of calcium in milk with a copper ion-selective electrode and the MATi 07 system.

# Method description

## Sample

Full-cream milk

## Sample preparation

No sample preparation is necessary

## Configuration

MATi 07	
Ion-selective electrode, Cu	6.0502.140
LL ISE Reference	6.0750.100

## Solutions

EGTA titrant	c(EGTA) = 0.1 mol/L in H <sub>2</sub> O Dissolve 38.04 g ethylene glycol-bis-(2-aminoethyl)-tetraacetic acid in 250 mL c(NaOH) = 1 mol/L and, after cooling down, make up to 1 L with dist. water.
Auxiliary solution	c(CuEGTA) = 0.05 mol/L Mix 100 mL c(EGTA) = 0.1 mol/L with 100 mL of a solution containing c(NH <sub>4</sub> Cl) = 0.2 mol/L and exactly c(CuSO <sub>4</sub> ) = 0.1 mol/L.
Ammonia buffer	54 g NH <sub>4</sub> Cl and 350 mL w(NH <sub>3</sub> ) = 25% are dissolved in dist. water and filled up to 1 L.

## Analysis

10 mL milk is added to approx. 50 mL distilled water in a titration beaker. 5 mL buffer solution and 1 mL auxiliary solution are added. The solution is then titrated with c(EGTA) = 0.1 mol/L until after the equivalence point.

## Parameters

Mode	MET U
Pause	30 s
Stirrer speed	8
Volume. increment	50 µL
Signal drift	30 mV/min
Min. waiting time	5 s
Max. waiting time	32 s
Stop EP	1
EP criterion	20 mV
EP recognition	greatest

## Results

Mean in g/L	s(abs) in g/L	RSD in %
1.17 (n = 5)	0.019	1.67