Ti Application Note No. T- 66

Title:	**Calcium in cheese**

***Summary*:**	Determination of calcium in cheese by potentiometric titration with EGTA using the Cu ISE.

Sample:	Any cheese

Sample Preparation:	If necessary grind the cheese before using it for analysis. Weigh approx. 1 g of it into a beaker, then add 50 mL dist. water and 10 mL c(H_2SO_4) = 0.05 mol/L. Heat the mixture to 40 °C and stir at this temperature for 10 min. After cooling down, pre-neutralise to about pH = 7 by adding c(NaOH) = 0.1 mol/L.

Instruments and Accessories:	702, 716, 736, 751 or 785 Titrino or 726 Titroprocessor, 6.0502.140 Cu ISE, 6.0726.100 Ag/AgCl reference electrode

Analysis:	Add 4 mL CuEGTA complex solution (0.05 mol/L) and 10 mL NH_3/NH_4Cl buffer pH = 10 to the prepared sample solution, then titrate with c(EGTA) = 0.05 mol/L using the MET mode.

Calculation:	% Ca^{2+} = EP1 * C01 * C02 * C03 / C00 EP1 = titrant consumption in mL C00 = approx. 1 (sample weight in g) C01 = 40.08 [m(Ca^{2+}) in g/mol] C02 = 0.05 (concentration of the titrant in mol/L) C03 = 0.1 (conversion factor for %)

Results:	AVG(5) = 0.528 ± 0.011 % Ca^{2+} (for a Swiss cheese)

Remarks:	If the cheese sample is not heated and no sulphuric acid is added this leads to results that are too low.