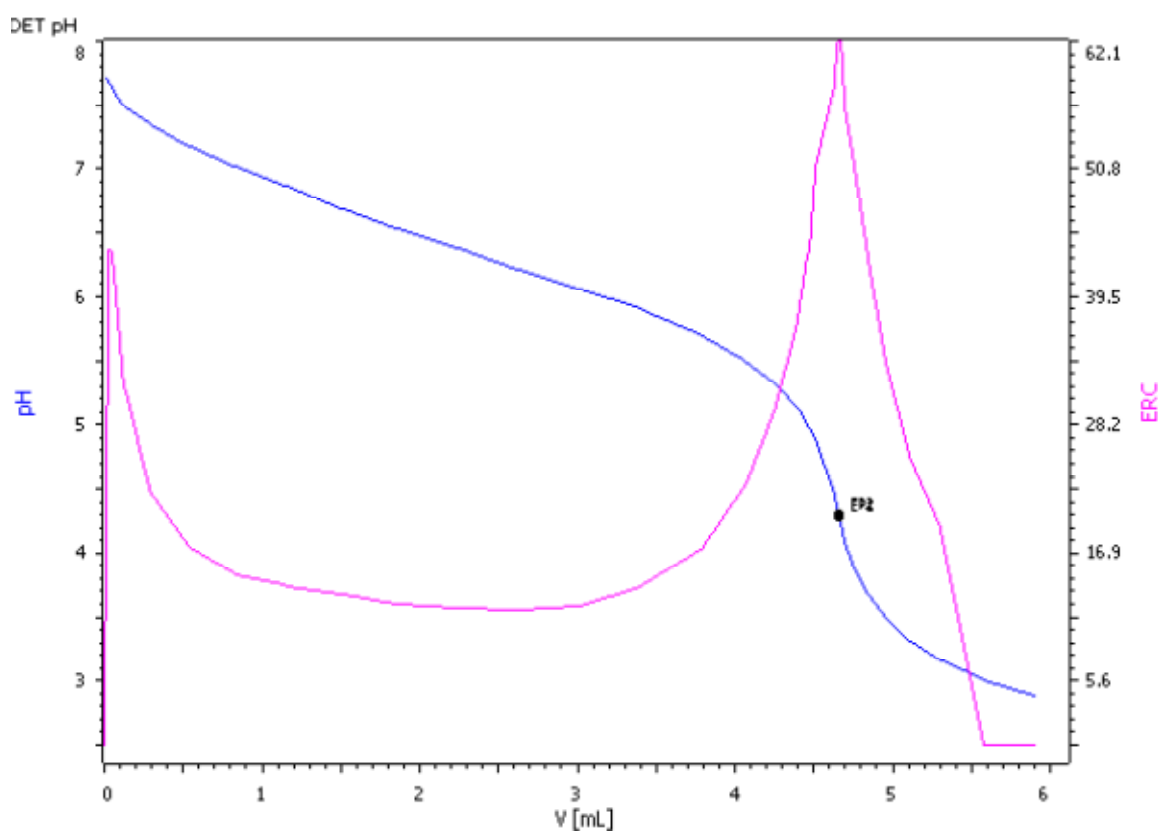# Fully automated determination of conductivity, pH value, and alkalinity in tap water including sample preparation

The automated system **Basic water analysis** determines conductivity, pH value, and alkalinity in all kind of water samples. The high degree of automation (e.g., automated sample addition, automated calibration as well as automated titer and cell constant determination) minimizes errors and guarantees an outstanding reproducibility.

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Method description

Sample

Herisau tap water

Sample preparation

There was no specific sample preparation required as the system automatically transfers the defined sample volume to the external titration cell after conductivity measurement.

Electrodes

Five-ring cond. meas. cell (c = 0.7 cm^{-1})	6.0915.100
i-Aquatrode Plus Pt1000	6.0277.300

Solutions

Electrolyte	6.2313.000
Buffer pH = 4	6.2307.100
Buffer pH = 7	6.2307.110
Buffer pH = 9	6.2307.120
Conductivity standard 100 µS/cm	6.2324.010
Titrant for alkalinity	c(HCl) = 0.1 mol/L
Standard	C(TRIS) = 10.44 mg/mL

Analysis

The water samples are filled in beakers and placed on the sample rack. First, the conductivity measurement is performed in the sample beaker. After that, 80 mL sample is automatically transferred to the titration cell where the pH measurement and the alkalinity titration are carried out.

Parameters

The following methods are included in the delivery:

Determination of the conductivity cell constant
pH calibration
Titer HCl
Conductivity – pH value – alkalinity

Instrumentation

Basic water analysis	2.815.9010

Results

Parameter	Mean (n = 10)	Rel. standard deviation in %
Conductivity	540.3 µS/cm	0.89
pH value	7.77	0.49
p value	N/A	
m value	5.99 mmol/L	0.10

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