

ELECTROMOTIVE FORCE OF CONCENTRATION CELL

Name:

Group:

Date:

1. Goal of the experiment:

2. Measurement of the electrode potential of silver electrodes.

Electrode potential of the calomel reference electrode: $\Delta V_r = \dots\dots\dots$

value of the $\frac{RT}{zF}$ constant =

	concentration c	measured electromotive force of a cell EMF	calculated electrode potential ΔV_e^*	$\frac{RT}{zF} \ln c$	calculated standard electrode potential ΔV_0^{**}
	mole/dm ³	mV	mV	mV	mV
1					
2					
3					
4					

* $\Delta V_e = \dots\dots\dots$
formula

** $\Delta V_0 = \dots\dots\dots$
formula

4. Measurements of the electromotive force (EMF) of the concentration cell without transference as a function of the concentration c_2 in the right half-cell.

Concentration c_1 in the left half-cell is equal to 0.1 mole/dm³.

	c_2	EMF (experimental value)	$\ln \frac{c_1}{c_2}$	EMF* (T_1) (calculated)	EMF* (T_2) (calculated)	EMF** (calculated)
	mole/dm ³	mV	mV	mV	mV	mV
1						
2						
3						

EMF* - based on the Nernst equation at two different temperatures: T_1 – the actual temp., $T_2 = 18^\circ\text{C}$

$EMF^* = \dots\dots\dots$
formula

EMF** - based on the calculated electrode potentials ΔV_e (see point 2 of the report)

$EMF^{**} = \dots\dots\dots$
formula

