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: $\Delta V_r =$ ....

    value of the $\dfrac{RT}{zF}$ constant = ...

	concentration c	measured electromotive force EMF	calculated electrode potential ΔVe^*	$\dfrac{RT}{zF}\ln c$	calculated standard electrode potential ΔV_0 **
	mole/dm^3	mV	mV	mV	mV
1					
2					
3					
4					
					mean: ....

    * $\Delta V_e =$ ....
   formula

   ** $\Delta V_0 =$ ....
   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/dm^3.

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

EMF*   - based on the Nernst equation at two different temperatures: T_1 – the actual temp., $T_2 = 18°C$

             $EMF^* =$ ....
   formula

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

             $EMF^{**} =$ ....
   formula

Make a graph of the function: $EMF = f\left(\ln\dfrac{c_1}{c_2}\right)$ for both: the experimental and theoretical (calculated) value.

Conclusions: ....

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