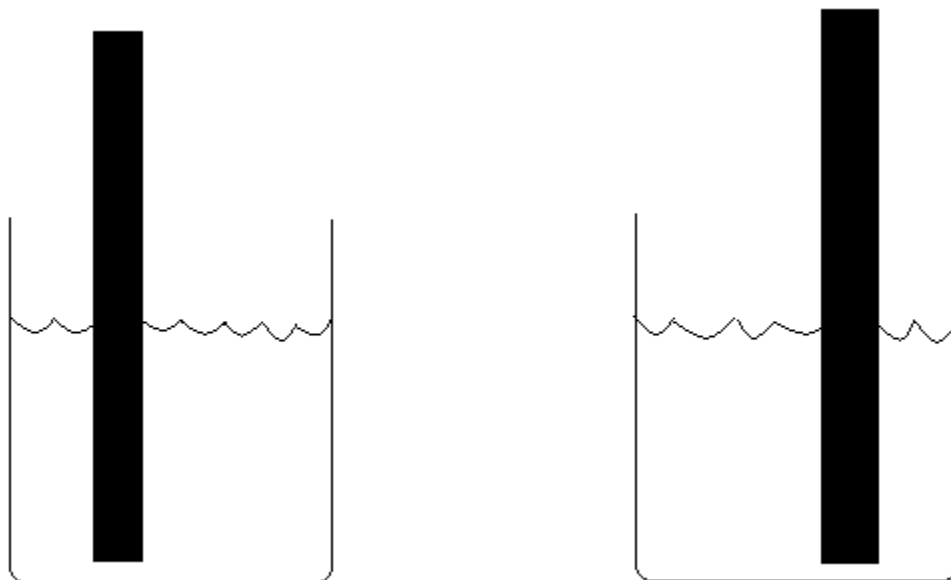


Electrochemistry Practice Problem

Create a functional Galvanic cell given the following: On the **left side** of the cell there is bromine liquid in a beaker with a solid inert carbon electrode. On the **right side**, there is liquid mercury in a beaker also with an inert carbon electrode. Draw the cell and label the anode, cathode, electrodes, solutions and complete all parts of the cell. Write and balance the half reactions and overall cell reaction. Calculate the standard cell potential \mathcal{E}° , free energy ΔG° and equilibrium constant K. Indicate where **ALL** the charged particles flow in the cell and what they are. Also calculate the cell potential if the cell contained 0.25M potassium bromide and 1.35M mercury(II) solutions. Finally write the short hand notation for the cell. Reduction potentials can be found in Appendix D. An example cell is at the bottom of the electrochemistry chapter review. **Note: use the $\frac{1}{2}$ rxn for mercury that has the Hg_2^{2+} ion NOT the Hg^{2+} ion. Show all your work for calculations.**



Final answers:

Ox $\frac{1}{2}$ rxn: _____ **Red $\frac{1}{2}$ rxn:** _____

Total Rxn : _____

$\mathcal{E}^\circ =$ _____ $\Delta G^\circ =$ _____ $K =$ _____

$\mathcal{E} =$ _____ short hand notation: _____