

NOTE: Use engineering format for problems 1 through 3, and use non-engineering format for problem 4-5. This is an individual assignment.

- Assume you have 8 Liters of water to which you add salt to create a mixture with 0.5wt% NaCl. Determine:
 - the mass of the water $m_{\text{water}}=8\text{kg}$
 - the mass of the salt $m_{\text{salt}}=0.0402\text{kg}$
 - the number of moles of NaCl 0.687 mol NaCl
 - the number of Cl⁻ ions $4.14 \times 10^{23} \text{ ions Cl}^-$
- If a constant current of 0.25mA passes through the probes of the conductivity sensor, how many OH⁻ molecules would be formed over a 3.5-minute period? $3.276 \times 10^{17} \text{ molecules of OH}^-$
$$2 \text{H}_2\text{O}(l) + 2e^- \rightarrow \text{H}_2(g) + 2\text{OH}^-(aq)$$
- A 10-gallon aquarium contains 3.5% salt by weight. How much 9% salt by weight water would you need to add to bring the salt concentration to 5% salt by weight? $31.2\text{lb } 9\% \text{ salt water}$
- Fill out the self/peer evaluation form found in the downloads page under Class 11. This is to serve a mid-project check on team and self-participation; please be honest with your answers. **Turn in the form in the next class in a separate stack from your homework.** Only your instructor will see the results of the form.
- Prepare with your group for the temperature evaluation. Download the evaluation document (found under Class 8 on the downloads page). Have the first page filled out and all required components ready to be turned in during your team's evaluation.