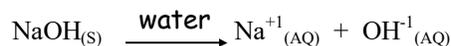


Answer all questions, draw all the pictures, answer questions in proper English, and think!

1. Define Immiscible and Miscible
2. When sodium hydroxide solid is put into water it will ionize. The proper chemical equation for this is shown below. This ionization is sometimes called disassociation.



Show the dissociation of ammonium nitrate and also of sodium hydrogen carbonate.

3. Draw the dissociation of 2 KCl FU's + surround them with 3 water molecules each, with proper orientation.
4. Are these electrolytes? $\text{Na}_3\text{PO}_{4(s)}$, $\text{Ca}(\text{OH})_{2(s)}$, $\text{NaCl}_{(aq)}$, $\text{PbBr}_{2(l)}$, $(\text{NH}_4)_2\text{S}_{(s)}$
5. Show the chemical formulas for glucose (sugar) dissolving into water.
6. How many grams of KI will saturate a 1205 mL aqueous solution at 15°C?
7. When 44.5 g $\text{H}_2\text{O}_{(l)}$ at 273 K changes phase, how many joules are removed?
8. Draw "Table G", but only the line for NH_4Cl . Indicate where on the graph "unsaturated" is, and where the saturated level would be. This should be at least 8 lines in height.
9. How many grams of NaCl dissolve into 43.0 mL water at 90°C? Show work.
10. Another name for "rate of solvation = rate of precipitation" is...
11. Is sugar water ($\text{C}_6\text{H}_{12}\text{O}_{6(aq)}$) an electrolyte? Doesn't the sugar dissolve into water? How could that be?
12. How can molten calcium chloride be an electrolyte?
13. Skip this one
14. $\text{CBr}_{4(l)}$ has a density of 3.42 g/cm³. Draw some $\text{CBr}_{4(l)}$ and some $\text{H}_2\text{O}_{(l)}$ in a graduated cylinder (label the diagram)
15. Only about one molecule per billion of water can dissociate. Even though it doesn't happen much, you should be able to write out the chemical equation for the dissociation of water into ions. Do that now.
16. Why does powdered sugar dissolve faster into hot coffee than sugar cubes?
17. Why does salty water boil at a higher temperature than pure water at the same pressure?
18. Why does salt dropped onto snow and ice melt it? (how does it lower the freezing point of water?)
19. How many joules will be released when 11.2 grams of steam condenses onto your hand?
20. Why is water a polar molecule?
21. What does soap do to the surface of water? How?