

Water - 21 Questions

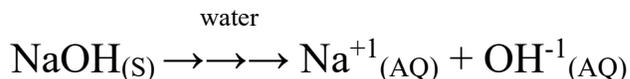
name: _____

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

1. Define Immiscible and Miscible

When sodium hydroxide solid is put into water it will ionize. The proper chemical equation for this is shown. This ionization is sometimes called disassociation.

You can see this on Table I.



2. Show the dissociation of ammonium nitrate.

3. Show the ionization of sodium hydrogen carbonate.

4. Draw 2 FU of LiBr surrounded by three water molecules EACH, with proper orientation.

5. Which are electrolytes, which are not? $\text{Na}_3\text{PO}_4(S)$, $\text{Ca}(\text{OH})_2(S)$, $\text{NaCl}_{(AQ)}$, $\text{PbBr}_2(L)$, $(\text{NH}_4)_2\text{S}(S)$

6. Show the chemical symbols for glucose (sugar) dissolving into water.

7. How many grams of KI will saturate a 1205 mL aqueous solution at 15°C? Do the math.

8. When 44.5 g $\text{H}_2\text{O}(L)$ at 273 K changes phase, how many joules are removed?

9. Draw a "Table G", but only the one curve for NH_4Cl . Indicate where on the graph "unsaturated" is, and where saturated would be. This graph should be at least 8 lines in height.

10. How many grams of NaCl dissolve into 43.0 mL water at 90°C? Show work.

11. Another name for "the rate of solvation = the rate of precipitation" is...

12. Is sugar water ($\text{C}_{12}\text{H}_{22}\text{O}_{11}(AQ)$) an electrolyte? Doesn't the sugar dissolve into water? Explain this.

13. Skip this one

14. How can molten (melted) calcium chloride be an electrolyte?

15. The density of $\text{CBr}_4(L) = 3.42 \text{ g/cm}^3$. Label a drawing of a test tube with $\text{CBr}_4(L)$ and water in it.

16. 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 symbols for the dissociation of water into ions. Do that now.

17. Why does powdered sugar dissolve faster into hot coffee than sugar cubes?

18. Why does salty water boil at a higher temperature than pure water at the same pressure?

19. Why does salt put into snow make the snow melt? (how does it lower the freezing point of H_2O ?)

20. How many joules will be released when 11.2 grams of steam condense onto your hand?

21. Why is water a polar molecule?

22. What does soap do to the surface of water? How?