

Water & Solutions Review Problems

Do all work, show all units, get them all right!

1. How many grams of ammonium chloride saturate 375 mL of H_2O at 80°C ?
2. Which of these three compounds, when mixed with pure water, creates an electrolytic solution? Ag_2SO_4 $\text{Sr}(\text{OH})_2$, MgCrO_4
3. What is the boiling point for pure water at 50 kPa?
4. When these two compounds are dissolved into water, which is an endothermic process, which is exothermic? sodium hydroxide ammonium nitrate
5. 156 grams of ammonium carbonate is dissolved into 3250 mL water. What is the molarity of this solution? What is the PPM solute in this solution?
6. A 4.35 M $\text{NaOH}_{(\text{AQ})}$ solution of 8.50 L contains how many grams of NaOH?
7. Zippy seltzer contains 8.25 grams $\text{CO}_{2(\text{G})}$ per 750. mL soda. What is the percent composition by mass of carbon dioxide in the soda, and then, what is the molarity of CO_2 in this soda?
8. Choose the proper method for mixing up a 1.00 M $\text{NaCl}_{(\text{AQ})}$ solution of 1.00 L.
 - A. 58 g NaCl into 1.0 L water
 - B. 1.0 L water into 58 g NaCl
 - C. 58 g NaCl into a flask, fill to 1.0 L with water
 - D. 58 g NaCl plus 1.0 L water into a flask larger than 1.00 L
9. Using a stock solution of 55 gallons that is 4.35 M nitric acid, how would you prepare 726 mL of a 2.20 nitric acid solution?
10. When 3.0 moles sodium chloride is dissolved into one kilogram of pure water, what is the new boiling point of this aqueous solution? What is the new freezing point as well?