

**More Chapter 11 Study Questions**

1. A household chlorine bleach is a water solution that is 5.00% by mass sodium hypochlorite. What is the molality of the hypochlorite in the solution? What is the mole fraction of hypochlorite in the solution?
2. How many grams of a 32.0% sodium hydroxide solution contain 12.8 grams of sodium hydroxide?
3. What is the mass percent of solute in a solution that has a mole fraction of 0.0476 sodium hydroxide in water? If the density of the solution is  $1.11 \text{ g/cm}^3$ , what is the molarity of the solution?
4. What is the mole fraction of potassium nitrate in a saturated solution of potassium nitrate in water at  $80.^\circ\text{C}$ ?
5. What is the boiling point of a solution containing 44.6 g of toluene ( $\text{C}_7\text{H}_8$ ) dissolved in 250. g of benzene?
6. How many grams of calcium chloride must be added to 200. grams of water to make a solution with a freezing point of  $-10.0^\circ\text{C}$ ?
7. A solution containing 9.00 g of an alcohol in 300.0 g of water has a freezing point of  $-0.930^\circ\text{C}$ . What is the molecular formula of this alcohol?