

Solution Concentration

Solve each problem below showing all work.

1. A common IV used in hospitals is a saline solution that consists of 4.5 g NaCl and 495.5 g distilled water. What is the concentration of the solution? Express your answer as a percentage.
2. One teaspoon of sucrose is dissolved in one cup of water. Identify:
 - a. The solute
 - b. The solvent
3. One teaspoon of sucrose with a mass of 10.0 grams is dissolved in 240.0 grams of water. What is the concentration of the solution? Express your answer as a percentage *and* as parts per hundred (pph).
4. What is the concentration of a solution that consists of 17 grams of sucrose dissolved in 183 grams of water? Express as a percentage.
5. What is the concentration of a solution that is made of dissolving 30 grams of sucrose in 300 grams of water? Express as a percentage.
6. 0.0020 grams of iron (III) ions are dissolved in 500 grams of water. What is the concentration of this solution expressed in ppm?
7. 0.25 grams of calcium ions are dissolved in 850 grams of water. What is the concentration of this solution expressed in ppm?
8. A saturated solution of potassium chloride is prepared by dissolving 45 grams of KCl in 100 grams of water at 60 °C.
 - a. What is the concentration of this solution?
 - b. What would the new concentration be if you were to add 155 grams of water instead?

