Science & Technology 404

Worksheet – Concentration in ppm

1. You dissolve 2.50 grams of solute in 3 500 000 ml of water. What is the concentration in ppm?

2. A mass of 0.00401 grams of salt is dissolved in 675 000 ml of water. What is the concentration in ppm?

3. A total of 5.00 mg of lead is dissolved in 2.00 L of water. What is the concentration in g/L?

4. A mass of 25 grams of a chemical is dissolved in 75 ml of water. What is the concentration in %?

5. If 17 grams of sucrose is dissolved in 183 ml of water. What is the concentration of sucrose in ppm?

6. During a lab, you are asked to dissolve 285 g of NaCl in 100 ml of distilled water. What is the concentration in ppm?

7. If you dissolve 0.8 g of AgCl into 100 ml of water, what will the concentration be in %? in g/L? in ppm?

8. The Sureté du Québec has advised the Town of St-Lazare that 23 kg of a certain pesticide was accidentally spilled in a local pond where local residents often swim in the summer. The maximum safe concentration of this pesticide for swimming is 0.1 ppm.
   The pond has a total volume of 12 141 000 L.

   a) Calculate the concentration in ppm.

   b) Is the pond safe to swim in?

9. Carbon monoxide (CO) is a gas that can be very dangerous to human health at certain concentrations because it takes the place of oxygen molecules on red blood cells. Most people will not experience any symptoms from prolonged exposure to CO levels of approximately 1 to 70 ppm but some heart patients might experience an increase in chest pain. As CO levels increase and remain above 70 ppm, symptoms become more noticeable and can include headache, fatigue and nausea. At sustained CO concentrations above 150 to 200 ppm, disorientation, unconsciousness, and death are possible.

   You have spent the last hour working in an enclosed space where there is 2.2 g of carbon monoxide per 25 000 ml of air. As a young person in relatively good health, how will you feel if you are exposed to the concentration of CO described?