

Name: Answers

**Concentration Worksheet**  
**Science and Technology Sec. IV**

**Show all your work and use the correct units**

1. Find the concentration of a mixture that contains 12.0 g of silver nitrate in 60.0 mL of water.

200 g/L

2. Find the concentration of a mixture that contains 1600 grams of salt in 4 liters of water.

400g/L

3. What mass of solute would be needed to make a 50.0 mL of salt solution having a concentration of 10.0 g/L

0.5g

4. What mass of solute would be needed to make a 6.00 L of nickel nitrate solution having a concentration of 24.0 g/L

144g

5. What volume of solvent in liters is needed to make a solution having a concentration of 10 g/L if you are using 5 grams of solute?

0.5L

6. Which is more concentrated: 34 g of salt dissolved in 100 mL of water or 100 g of salt in 1500 mL of water?

340g/L

66.7g/L

7. Sand is insoluble in water. If you have 50 g of sand, how much water would you need to dissolve it?

No amount will dissolve sand because insoluble means it will not dissolve.

8. What is the volume of 15% (m/V) salt solution that contains 7.5 g of NaCl?

50 mL

9. You have 200 mL of a 10% (m/V) solution. What is the mass of solute?

20 g

10. The concentration of alcohol in a certain wine bottle is 11% (V/V). What volume of alcohol is contained in a 750 mL bottle?

82.5 mL

11. What is the concentration of iron ions in ppm if 0.00020 g of iron (3) ions are dissolved in 2.5000 kg of water?

0.08 ppm

12. Oil was found to have dioxin contamination of 2 ppm.

~~5000 mL~~

50 000 mL

13. How many mL of the oil would contain 0.1 g of dioxin?

14. In some creek water, the concentration of lead ions is 0.05 ppm. Calculate the mass of the lead ions per litre of creek water.

0.05 mg/L

15. The Safe Drinking Water Act (SDWA) sets a limit for mercury—a toxin to the central nervous system (CNS)—at 0.002 ppm by mass. Water suppliers must periodically test their water to ensure that mercury levels do not exceed this limit. Suppose water becomes contaminated with mercury at twice the legal limit. How much of this water would have to be consumed for someone to ingest 50 mg of mercury?

12500L