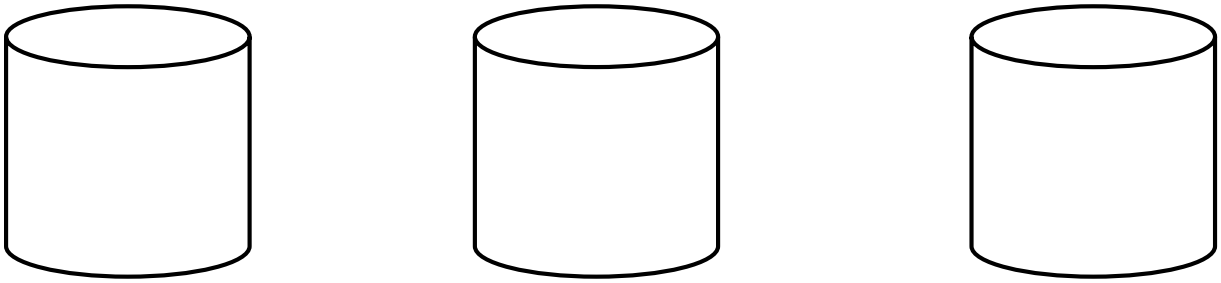
Day 5.3 Warm-Up

Beaker A contains 2.0 L of 3.0 M $NaNO_3$(aq). Beaker B contains 3.0 L of 2.0 Na_2SO_4(aq).

1. Draw the particles in solution in each beaker.



Beaker A Beaker B Beaker C

2. Calculate the concentration of Na^+ ions in each beaker.

3. The contents of Beakers A and B are poured into an empty Beaker C. Calculate the concentration of Na^+ ions in Beaker C.

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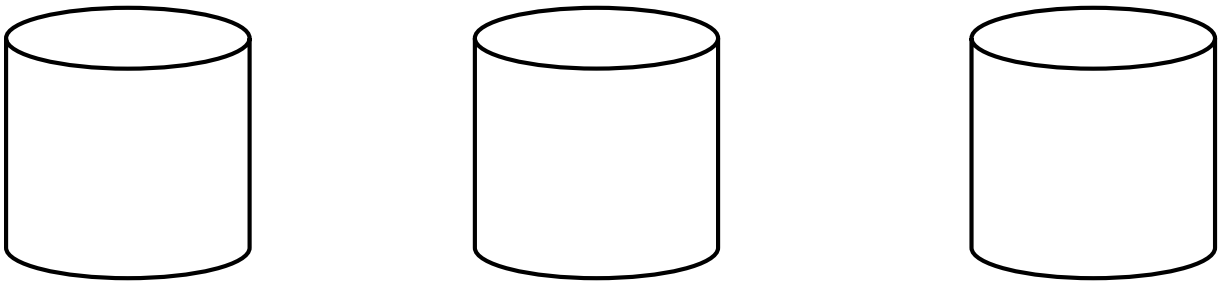


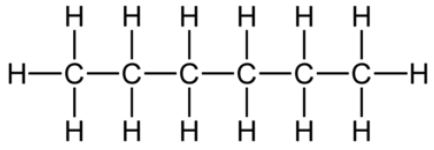
Beaker A Beaker B Beaker C

2. Calculate the concentration of Na^+ ions in each beaker.

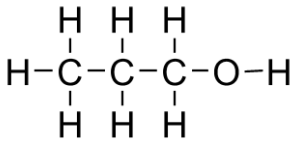
3. The contents of Beakers A and B are poured into an empty Beaker C. Calculate the concentration of Na^+ ions in Beaker C.

4. A 0.10 M aqueous solution of sodium sulfate, Na_2SO_4, is a better conductor of electricity than 0.10 M aqueous solution of sodium chloride, NaCl. Which of the following best explains this observation?
   a. Na_2SO_4 is more soluble in water than NaCl.
   b. Na_2SO_4 has a higher molar mass than NaCl.
   c. To prepare a given volume of 0.10 M solution, the mass of Na_2SO_4 needed is more than twice the mass of NaCl needed.
   d. More moles of ions are present in a given volume of 0.10 M Na_2SO_4 than in the same volume of 0.10 M NaCl.
   e. The degree of dissociation of Na_2SO_4 in solution is significantly greater than that NaCl.

5. The Lewis structure of a molecule of hexane, C_6H_{14}, and propanol, C_3H_7OH are below. Is hexane soluble in propanol? Explain your reasoning.



Hexane



Propanol

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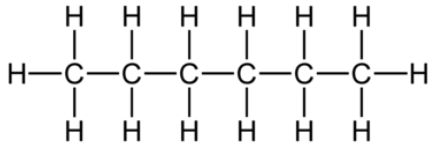
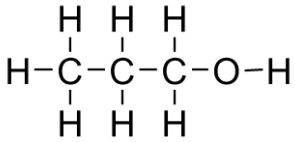


Hexane



Propanol