Hw. week 3 Chem. 6A CSUS S05

Ch2.

66. \[ d = \frac{m}{V} \]

\[ m = dV = \left( 13.6 \text{ g/mL} \right) (25.0 \text{ mL}) = 3.40 \times 10^2 \text{ g} \]

72. The conversion is: \( L \rightarrow \text{cm}^3 \rightarrow g \rightarrow \text{lb} \)

\[ \left( 3.1 \text{ L} \right) \left( 1000 \text{ cm}^3 \right) \left( 1.03 \frac{\text{g}}{\text{cm}^3} \right) \left( \frac{1 \text{ lb}}{453.6 \text{ g}} \right) = 7.0 \text{ lbs} \]

84. \( (1.00 \text{ cm}^3) \left( \frac{2.54 \text{ cm}}{\text{in.}} \right)^3 = 16.4 \text{ cm}^3 \) in 1.00 cubic inch

Ch3.

32. diatomic molecules (a) \( \text{H}_2 \)  (c) \( \text{HCl} \)  (e) \( \text{NO} \)

36. (a) \( \text{AlBr}_3 \)  (c) \( \text{PbCrO}_4 \)  (d) \( \text{C}_6\text{H}_6 \)
   
   (b) \( \text{CaF}_2 \)

40. (a) 2 atoms  (c) 9 atoms  (d) 5 atoms  (e) 17 atoms
   
   (b) 2 atoms

44. (a) mixture  (c) pure substance  (d) mixture  (e) pure substance
   
   (b) pure substance

47. (a) mixture  (c) compound  (d) mixture
   
   (b) element

51. (a) \( \text{CH}_2\text{O} \)  (b) \( \text{C}_4\text{H}_9 \)  (c) \( \text{C}_{25}\text{H}_{52} \)

58. A physical change is reversible. Therefore, boil the salt-water solution. The water will evaporate and leave the salt behind.

60. (a) 1 carbon atom and 1 oxygen atom, total number of atoms = 2
   
   (b) 1 boron atom and 3 fluorine atoms, total number of atoms = 4
   
   (c) 1 hydrogen atom, 1 nitrogen atom, 3 oxygen atoms, total number of atoms = 5
   
   (d) I potassium atom, 1 manganese atom, 4 oxygen atoms, total number of atoms = 6
   
   (e) 1 calcium atom, 2 nitrogen atoms, 6 oxygen atoms, total number of atoms = 9
   
   (f) 3 iron atoms, 2 phosphorus atoms, 8 oxygen atoms, total number of atoms = 13

64. (a) As temperatures decreases, density increases.
   
   (b) approximately 1.28 g/L 5°C
   
   approximately 1.19 g/L 25°C
   
   approximately 1.09 g/L 70°C