Hw. week 3 Chem. 6A CSUS S05

Ch2.

66. $d = \dfrac{m}{V}$

$$m = dV = \left(13.6\frac{g}{mL}\right)(25.0\ mL) = 3.40 \times 10^2\ g$$

72. The conversion is: $L \rightarrow cm^3 \rightarrow g \rightarrow lb$

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

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

Ch3.

32. diatomic molecules (a) H_2, (c) HCl, (e) NO

36. (a) $AlBr_3$
(b) CaF_2
(c) $PbCrO_4$
(d) C_6H_6

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

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

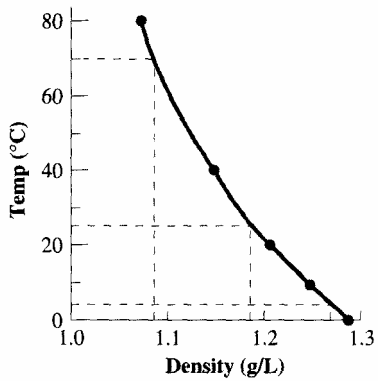
47. (a) mixture
(b) element
(c) compound
(d) mixture

51. (a) CH_2O (b) C_4H_9 (c) $C_{25}H_{52}$

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) 1 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