1) % Comp Na_3PO_4

Na - 3 x 23.0 = 69.0
P - 1 x 31.0 = 31.0
O - 4 x 16.0 = 64.0
164.0 g/mol

$\%Na = \frac{69.0}{164.0} \times 100 = 42.1\%$

$\%P = \frac{31.0}{164.0} \times 100 = 18.9\%$

$\%O = \frac{64.0}{164.0} \times 100 = 39.0\%$

100.0%

Gallium (III) molybdate

$Ga_2(MoO_4)_3$

Ga - 2 x 69.7 = 139.4
Mo - 3 x 95.9 = 287.7
O - 12 x 16.0 = 192.0
619.1 g/mol

$\%Ga = \frac{139.4}{619.1} \times 100 =$

$\%Mo = \frac{287.7}{619.1} \times 100 =$

$\%O = \frac{192.0}{619.1} \times 100 =$

100.0%

Empirical Formula

$\frac{1.95\text{ g K}}{39.1\text{ g K}} \times \frac{1\text{ mol K}}{39.1\text{ g K}} = .023\text{ mol K}$ $\frac{.023}{.023} = 1$

$\frac{1.12\text{ g Cr}}{52.0\text{ g Cr}} \times \frac{1\text{ mol Cr}}{52.0\text{ g Cr}} = .023\text{ mol Cr}$ $\frac{.023}{.023} = 1$

$\frac{1.27\text{ g O}}{16.0\text{ g O}} \times \frac{1\text{ mol O}}{16.0\text{ g O}} = .079\text{ mol O}$ $\frac{.079}{.023} = 3.5$

$3.5 = 3\frac{1}{2} = \frac{7}{2}$

$K_2Cr_2O_7$

Na 29.1% S 40.5% O 30.4%

Based on 100 g sample

$\frac{29.1\ g\ Na}{} \times \frac{1\ mol\ Na}{23.0\ g\ Na} = 1.27\ mol\ Na$

$\frac{40.5\ g\ S}{} \times \frac{1\ mol\ S}{32.1\ g\ S} = 1.26\ mol\ S$

$\frac{30.4\ g\ O}{} \times \frac{1\ mol\ O}{16.0\ g\ O} = 1.9\ mol\ O$

$1 : 1 : 1.5 = \frac{2}{2} : \frac{2}{2} : \frac{3}{2}$ $Na_2S_2O_3$

$.76\ mol\ NaCl \times \frac{6.02 \times 10^{23}\ formula\ units\ NaCl}{1\ mol\ NaCl} = 4.58 \times 10^{23}\ formula\ units\ NaCl$

$53.1\ g\ HBr \times \frac{1\ mol\ HBr}{80.9\ g\ HBr} = .656\ mol\ HBr \times \frac{6.02 \times 10^{23}\ formula\ units\ HBr}{1\ mol\ HBr} =$

3.95×10^{23} formula units HBr

$2.44 \times 10^{-4}\ molecules\ SiH_4 \times \frac{1\ mol\ SiH_4}{6.02 \times 10^{23}\ molecules\ SiH_4} = 4.05 \times 10^{-28}\ mol\ SiH_4$

$4.05 \times 10^{-28}\ mol\ SiH_4 \times \frac{32.1\ g\ SiH_4}{1\ mol\ SiH_4} = 130.1\ g\ SiH_4$

Si 28.1
H 4.0
32.1

SiH_4 H^{-1} SiH_4