Sept 23, 2019

1) answers to HW pg 198 #1-7

2) Polyatomics cont

Reminder Quiz on Wednesday!!!

Reminder Test on Chp 5 next Tuesday Oct 1st!!

Warm-Up

Write Formulas for the following:

1) potassium chlorate $K^{1+}ClO_3^{1-}$ $KClO_3$

2) iron (II) hydroxide $Fe^{2+}OH^-$ $Fe(OH)_2$

Name the following:

1) $Ni(NO_3)_3$ nickel (III) nitrate

2) $Mg_3(PO_4)_2$ magnesium phosphate

1. A polyatomic ion is a charged group of atoms that chemically acts as a single particle. Examples: hydroxide $(OH)^{1-}$, phosphate $(PO_4)^{3-}$

2. The sodium ions and nitrate ions separate from each other and are free to move around. They can also conduct an electric current.

3. (a) Na_3PO_4
(b) $CaSO_4$
(c) $KClO_3$
(d) $Al(OH)_3$
(e) $Be(NO_3)_2$
(f) $Mg(HCO_3)_2$
(g) $NiCO_3$

4. (a) potassium carbonate
(b) sodium sulfate
(c) aluminum bicarbonate
(d) silver nitrate

5. (a) The numerical value of the ionic charge of the polyatomic ion indicates the number of hydrogen atoms the ion combines with to form the oxyacid. Examples: i) nitrate has a 1- charge and combines with one hydrogen atom to form $HNO_{3\,(aq)}$

(b) The sum of the positive charges and the sum of the negative charges must be equal in order to produce a neutral compound. Since the hydrogen atom forms a 1+ ion, the number of hydrogen atoms needed is the same as the numerical value of the ionic charge of the polyatomic ion.

6. A polyatomic ion chemically acts as a single particle. Therefore, the presence of a polyatomic ion must be clearly indicated in the formula of the compound. Both ammonium (NH_4^+) and nitrate (NO_3^-) are polyatomic ions.

7. (a) ammonium chloride, NH_4Cl
(b) ammonium sulfate, $(NH_4)_2SO_4$

May 8-9:21 AM

oxyacids - compounds formed when hydrogen combines with polyatomic ions that contain oxygen.

Ex. H^+ NO_3^- (nitrate)

HNO_3

(nitric acid)

Ex. H^{1+} SO_4^{2-}

H_2SO_4

(sulfuric acid)

common oxyacids on pg 198 table 3

hydrogen carbonate (HCO_3^{1-})
(bicarbonate)

Polyatomic worksheet

Feb 19-8:11 AM