Oct 4, 2019

Answers WS
Counting Atoms

Warm-Up

Write the word and chemical equation for the following:

1. When dissolved magnesium hydroxide reacts with phosphoric acid (H_3PO_4), magnesium phosphate, and water are formed.

Mar 3-8:40 AM

1. sodium + chlorine → sodium chloride
   Na + Cl_2 → NaCl

2. Hydrogen peroxide → water + oxygen
   H_2O_2 → H_2O + O_2

3. Water + carbon dioxide → heptacarbon octahydride + oxygen
   H_2O + CO_2 → C_7H_8 + O_2

4. Sodium chlorate → sodium chloride + oxygen
   $NaClO_3$ → NaCl + O_2

5. Potassium bromide + iron (III) hydroxide → potassium hydroxide + iron (III)bromide
   KBr + $Fe(OH)_3$ → KOH + $FeBr_3$

$Sn^{4+}O^{2-} + H_2 \rightarrow Sn + H_2O$

6. Tin (IV) oxide + hydrogen → tin metal + water vapor
   SnO_2 + H_2 → Sn + H_2O

Sn_2O_4

7. iron + hydrogen sulfate → iron (III) sulfate + hydrogen
   Fe + H_2SO4 → $Fe_2(SO_4)_3$ + H_2

8. dicarbon hexahydride + oxygen → water + carbon dioxide
   C_2H_6 + O_2 → H_2O + CO_2

9. potassium hydroxide + hydrogen phosphate → potassium phosphate + water
   KOH + H_3PO_4 → K_3PO_4 + H_2O

10. tin(IV) oxide + hydrogen → tin + water
    SnO_2 + H_2 → Sn + H_2O

Nov 12-11:20 AM

Why must equations be balanced???

***The Law of Conservation of Mass* states:**

that matter is neither lost nor gained in chemical reactions; it simply changes form.

the atoms are rearranged

so when you look at a chemical reaction it must have the same number of atoms of each element in the reactants and in the products.

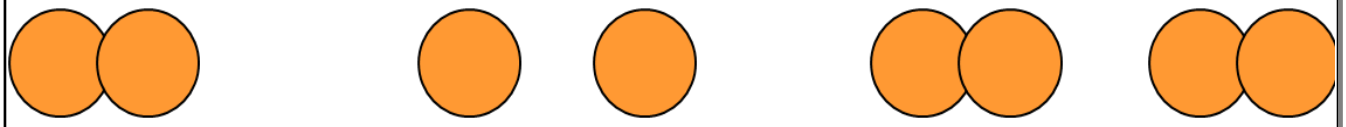
As well as the mass of reactants and the mass of the products must also be equal.

Oct 11-7:26 PM

In order to be able to balance equations 1st you need to know **how to count atoms**

How molecules are symbolized

Cl_2 2Cl $2Cl_2$



Apr 26-10:23 AM

Blackline Master 6.5a
How to Count atoms Review

Fill in the areas in red on your own sheet

1. The symbol of an element represents one atom of that element.
e.g., Ca = 1 atom of calcium

2. A subscript is a number written at the lower right corner behind the symbol of an element. If there is more than one atom of the element in the molecule, then a subscript is used to indicate the number of atoms.
e.g., N_2 = 2 atoms of nitrogen

3. A subscript outside a bracket multiplies all the elements inside the brackets.
e.g., $Ba_3(PO_4)_2$ = 3 atoms of barium
2 atoms of phosphorous
8 atoms of oxygen

3 atoms of barium
2 atoms of phosphate

4. (a) A coefficient is a number written in front of a chemical symbol and indicates the number of atoms of
that element.
e.g., 3C = 3 atoms of carbon
OR
(b) A coefficient is a number written in front of a chemical formula and indicates the number of molecules
of that compound.
NOTE: A coefficient multiplies the number of atoms of each element in the formula.
e.g., $2H_2O$ = 4 atoms of hydrogen
2 atoms of oxygen

$3FeSO_4$ = 3 atoms of iron
3 atoms of sulphur
12 atoms of oxygen

3 atoms of iron
3 atoms of sulphate

$4Cu(NO_3)_2$ = 4 atoms of copper
8 atoms of nitrogen
24 atoms of oxygen

4 atoms of copper
8 atoms of nitrate

Homework

Complete back of worksheet

Dec 13-9:31 AM