

Unit 2: Chemical Reactions Station Review

Station #1

Name the Following:

- a) NH_3 ammonia
 b) P_4S_{10} tetraphosphorus deca sulfide
 c) S_2O_7 disulfur heptoxide

- d) AlBr_3 aluminum bromide
 e) K_2S potassium sulfide

Write the formula:

- f) $\overset{2+}{\text{Cu}}\overset{2-}{\text{O}}$ cupric oxide CuO

Station #2

Complete the following name/formula

- a) potassium chlorate KClO_3
 b) tin(IV) hypochlorite $\overset{4+}{\text{Sn}}(\overset{1-}{\text{ClO}})_4$
 c) sodium phosphite $\overset{1-}{\text{Na}}_3\overset{3-}{\text{PO}_3}$

- d) $\text{Fe}(\text{BrO}_3)_2$ iron(II) bromate
 e) NaHCO_3 sodium hydrogen carbonate
 f) aluminum hydrogen phosphate bicarbonate
 $\overset{3+}{\text{Al}}\overset{2-}{\text{HPO}_4}$
 $\text{Al}_2(\text{HPO}_4)_3$

Station #3

Write names/formulas

- a) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ copper(II) sulfate pentahydrate
 b) $\text{HF}_{(\text{aq})}$ hydrofluoric acid
 c) hydrosulfuric acid $\text{H}_2\text{S}_{(\text{aq})}$
 d) $\text{HNO}_3_{(\text{aq})}$ pernitric acid
 e) $\text{H}_2\text{CO}_3_{(\text{aq})}$ carbonic acid
 f) sulfuric acid $\text{H}_2\text{SO}_4_{(\text{aq})}$

Station #4

Complete the following chart:

Oxy Anion Name	Oxygen Content	Acid Name
per-ate	one more	per-ic acid
-ate	normal	-ic acid
-ite	one less	-ous acid
hypo-ite	two less	hypo-ous acid

How do you name binary acids?

hydro-ic acid

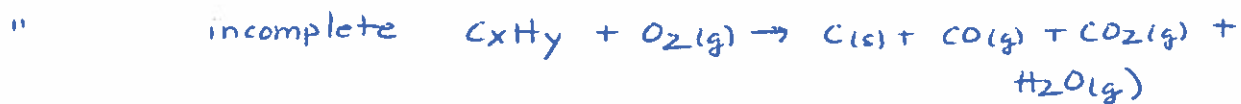
Station #5

Balance the following equations:

- a) $\text{CaO} + 3\text{C} \rightarrow \text{CaC}_2 + \text{CO}$
 b) $3\text{Na}_2\text{CO}_3 + 2\text{H}_3\text{PO}_4 \rightarrow 2\text{Na}_3\text{PO}_4 + 3\text{H}_2\text{O} + 3\text{CO}_2$
 c) Name the 5 types of reactions and give general equations

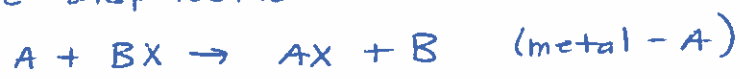


3. Combustion



e.g. CO_2 H_2O SO_2 NO_2

4. Single Displacement



5. Double Displacement



gas (do the DD first & check for decomposition)
precipitate (solubility chart)

neutralization acid + base \rightarrow salt + water

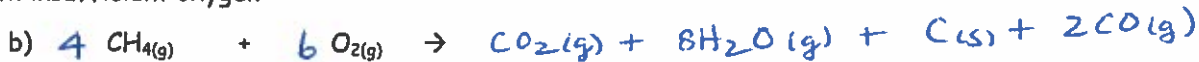
Station #6

Complete the following reactions

With excess oxygen



With insufficient oxygen



c) If you were to look at a flame, how could you tell if it is complete combustion? *blue flame*

d) What evidence would lead you to believe you have incomplete combustion? *yellow flame
soot (carbon solid)*

Station #7

Complete the following table/reactions

a) Metal carbonates \rightarrow *metal oxide + CO₂*

b) Carbonic acid \rightarrow *H₂O + CO₂*

c) Metal nitrate \rightarrow *metal nitrite + O₂*

d) Metal hydroxide \rightarrow *metal oxide + H₂O*

e) What type of reactions are these? *decomposition*

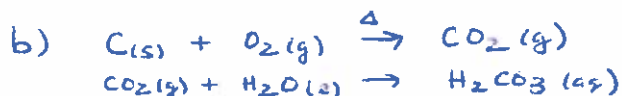
Station #8

Magnesium is burnt in oxygen to produce X. X is then reacted with water.



a) Write out both balanced chemical reactions

b) Repeat the same for the element carbon.



c) Describe the difference between the reaction of non-metal oxides + water and metal oxides + water

non-metal oxides + water \rightarrow acids

metal oxide + water \rightarrow bases

Station #9

What is the activity series? How does it work?

A table of metallic elements (plus H) used to predict when a SD reaction will occur

What is the halogen series? How does it work?

any element in the table will displace ions of the elements to the right from aqueous solutions of their salts

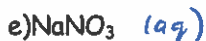
Complete



each element can displace the ions of any element below it (on the PT) from an aqueous solution of one of its salts

Station #10

Are the following aq or s in water?



Station #11

Complete the following:

