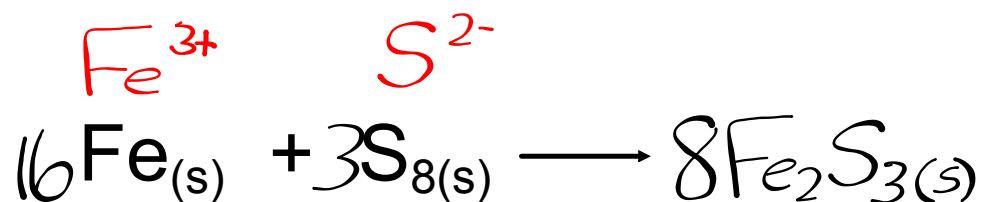
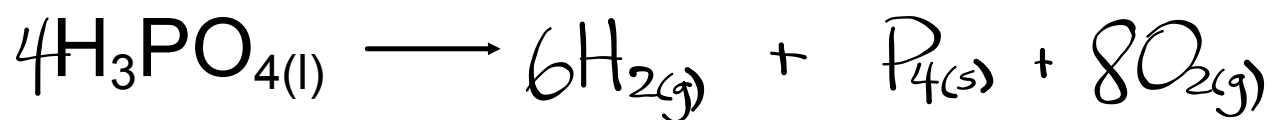
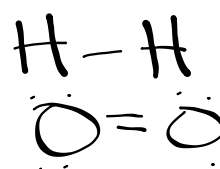


Warm Up





Br HONClIF (2)

P (4)

S (8)

Check Homework - Worksheet

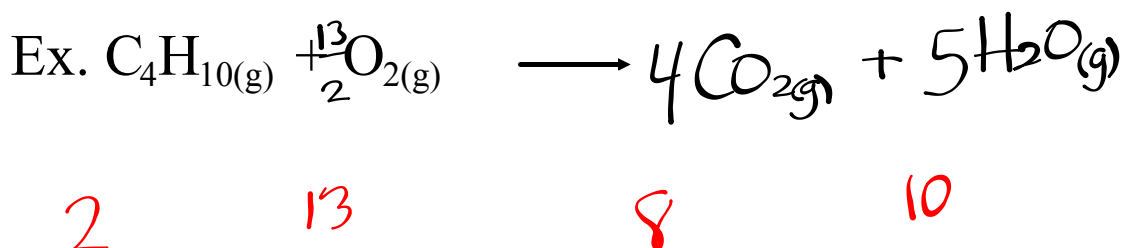
Chemical Reactions

III. Combustion Reaction

A complete combustion reaction is the burning of a substance with oxygen to produce the most common oxides of the elements in the substance being burned.

Most Common Oxides:

- Carbon : $\text{CO}_{2(g)}$
- Hydrogen: $\text{H}_2\text{O}_{(g)}$
- Sulfur: $\text{SO}_{2(g)}$
- Nitrogen: $\text{NO}_{2(g)}$
- A metal: Oxide of metal with most common ion charge



FORMATION

elements \rightarrow Compound

DECOMPOSITION

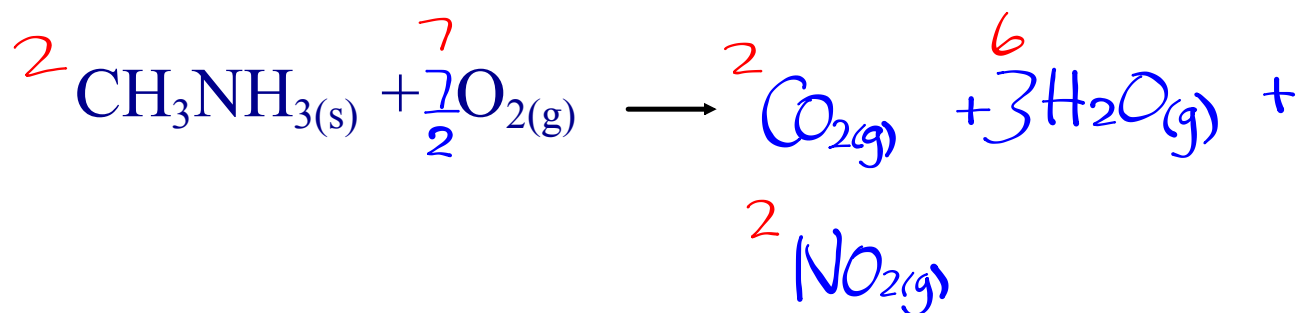
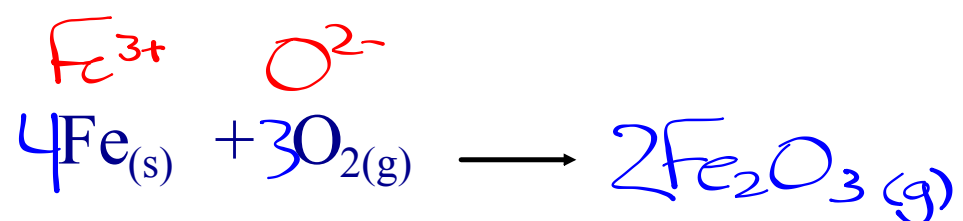
Compound \rightarrow elements

COMBUSTION

element/compound + $O_{2(g)}$ \rightarrow most common oxides

$$5.75 \text{ mol } \cancel{\text{O}_2} \times \frac{22.4 \text{ L O}_2}{1 \cancel{\text{ mol O}_2}} = 3.89 \text{ L } \text{O}_2$$

22.4 L/mol
 \Downarrow



Homework

p. 331 #13, 14

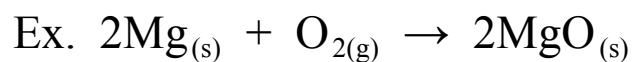
p. 332 #15, 16

p. 337 #20, 21

Chemical Reactions

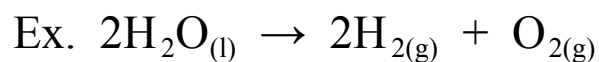
I. Formation Reactions

elements compound



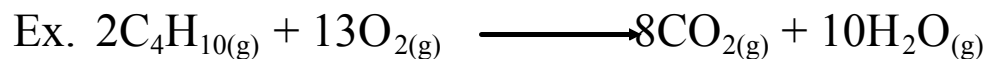
II. Decomposition Reactions

compound elements



III. Combustion Reaction

substance + oxygen \longrightarrow most common oxides



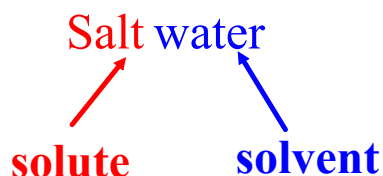
Chemical Reactions in Solution

Solution - homogeneous (uniform) mixture of a solute and a solvent.

⇒ solute - substance dissolved

⇒ solvent - substance doing dissolving (liquid)

Ex.



If the amount of solute that can dissolve in a solvent is large, then the solute is said to have *high solubility*.

If the amount of solute that can dissolve in a solvent is small, then the solute is said to have *low solubility*.

Solid substances formed from reactions in solutions are known as **precipitates**.

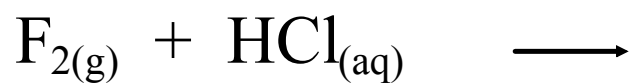
Solubility Rules

- Group 1 Compounds have a high solubility
- Compounds containing ammonium (NH_4^+) have a high solubility
- All acids have a high solubility
- Elements have a low solubility (except chlorine)
- Solubility varies for molecular compounds

Table 11.2
Activity Series of Metals

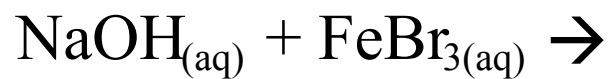
| | Name | Symbol |
|----------------------------|------------|------------------|
| Decreasing reactivity ↓ | Lithium | Li |
| | Potassium | K |
| | Calcium | Ca |
| | Sodium | Na |
| | Magnesium | Mg |
| | Aluminum | Al |
| | Zinc | Zn |
| | Iron | Fe |
| | Lead | Pb |
| | (Hydrogen) | (H) ⁺ |
| | Copper | Cu |
| | Mercury | Hg |
| | Silver | Ag |

Practice Problems



p. 334 #17

Practice Problems



p. 335 #18,19
p. 339 #22-27

Combustion Reactions

Write a balanced chemical equation for the following combustion reactions:

