Warm Up

$$\begin{array}{c} \text{Agt} & \text{S}^{2-} \\ \text{16 Ag(s)} + \text{S}_{8(s)} & \longrightarrow \text{SAg}_2S_{(s)} \\ \text{metal} & \text{normatal} \\ \text{FORMATION} \end{array}$$

$$2\text{CH}_3\text{NO}_{(s)} & \longrightarrow 2C_{(s)} + \text{3H}_{2(s)} + \text{N2}_{(s)}^+$$

$$O_{2(s)}$$

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:

 \bullet Carbon : $CO_{2(g)}$

• Hydrogen: H₂O_(g)

• Sulfur: $SO_{2(g)}$

•Nitrogen: NO_{2(g)}

• A metal: Oxide of metal with most common ion

charge

Ex.
$$C_5H_{12(g)} + O_{2(g)} \longrightarrow 5Co_{2(g)} + O_{2(g)}$$

$$F^{3+} O^{-}$$

$$4Fe_{(s)} +3O_{2(g)} \longrightarrow 2Fe_{2}O_{3(g)}$$

$$2CH_3NH_{3(s)} + 7O_{2(g)} \longrightarrow 2O_{2(g)} + 6H_{2O_{(g)}} + 2V_{2(g)}$$

Combustion Reactions

Write a balanced chemical equation for the following combustion reactions:

$$Mg^{2+}$$
 O^{2-}
 $2 Mg_{(s)} + O_{2(g)} \longrightarrow 2 MgO_{(g)}$
 $4 54$
 $C_{21}H_{24}N_2O_{4(s)} + 21O_{2(g)} \longrightarrow 2 CO_{2(g)} + 12H_{2O_{2(g)}} + 2 NO_{2(g)}$

Homework

p. 331 #13, 14

p. 332 #15, 16

p. 337 #20, 21

Chemical Reactions

I. Formation Reactions

elements compound

Ex.
$$2Mg_{(s)} + O_{2(g)} \rightarrow 2MgO_{(s)}$$

II. Decomposition Reactions

compound elements

Ex.
$$2H_2O_{(l)} \rightarrow 2H_{2(g)} + O_{2(g)}$$

III. Combustion Reaction

substance + oxygen \longrightarrow most common oxides

Ex.
$$2C_4H_{10(g)} + 13O_{2(g)}$$
 \bigcirc 8 $CO_{2(g)} + 10H_2O_{(g)}$

Chemical Reactions in Solution

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

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⇒solute - substance dissolved

⇒solvent - substance doing dissolving (liquid)
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Ex. Salt water solvent

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

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

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