Writing Complete Equations Practice

For each of the following problems, write complete chemical equations to describe the chemical process taking place. Important note: There are a few physical processes on this sheet – remember, you can't write an equation for a physical process!

1) When lithium hydroxide pellets are added to a solution of sulfuric acid, lithium sulfate and water are formed.

2) When dirty water is boiled for purification purposes, the temperature is brought up to 100^0 C for 15 minutes.

3) If a copper coil is placed into a solution of silver nitrate, silver crystals form on the surface of the copper. Additionally, highly soluble copper (I) nitrate is generated.

4) When crystalline $C_6H_{12}O_6$ is burned in oxygen, carbon dioxide and water vapor are formed.

5) When a chunk of palladium metal is ground into a very fine powder and heated to drive off any atmospheric moisture, the resulting powder is an excellent catalyst for chemical reactions.

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Writing Complete Equations Practice - Key

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1) When lithium hydroxide pellets are added to a solution of sulfuric acid, lithium sulfate and water are formed.

$2\ LiOH_{(s)} + H_2SO_{4(aq)} \rightarrow Li_2SO_{4(aq)} + 2\ H_2O_{(l)}$

2) When dirty water is boiled for purification purposes, the temperature is brought up to 100^0 C for 15 minutes.

No equation is needed, as boiling is a physical process.

3) If a copper coil is placed into a solution of silver nitrate, silver crystals form on the surface of the copper. Additionally, highly soluble copper (I) nitrate is generated.

$Cu_{(s)} + AgNO_{3(aq)} \rightarrow Ag_{(s)} + CuNO_{3(aq)}$

4) When crystalline $C_6H_{12}O_6$ is burned in oxygen, carbon dioxide and water vapor are formed.

$C_6H_{12}O_{6(s)} + 6\ O_{2(g)} \rightarrow 6\ CO_{2(g)} + 6\ H_2O_{(g)}$

5) When a chunk of palladium metal is ground into a very fine powder and heated to drive off any atmospheric moisture, the resulting powder is an excellent catalyst for chemical reactions.

Both grinding and heating are physical processes. Even if the atmospheric moisture is mentioned, boiling is still a physical process. No equation is needed.

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