What Are Catalysts and Inhibitors?

Worksheet

A catalyst speeds up a reaction by lowering activation energy and is regenerated unchanged. An inhibitor slows or blocks a reaction by raising activation energy or blocking active sites.

Questions

1. What does a catalyst do?

A) Increases product amount
B) Lowers activation energy
C) Changes equilibrium
D) Gets consumed

2. Is a catalyst regenerated after the reaction?

A) No, it's consumed
B) Yes, unchanged
C) Partially
D) Only if heated

3. What is an inhibitor?

A) A slow catalyst
B) Speeds reactions
C) Slows or blocks reactions
D) An enzyme

4. Enzyme function depends on a catalyst-like mechanism. Why?

A) Enzymes are not catalysts
B) They lower activation energy
C) They change G
D) They absorb heat

5. Hydrogen peroxide (HO) decomposes slowly, but adding MnO causes rapid decomposition. MnO is unchanged. What is MnO?

6. An enzyme speeds up glucose breakdown 10 times. Is it a catalyst?

7. Carbon monoxide binds to hemoglobin, preventing oxygen transport. Is CO an inhibitor?

8. Define: Define catalyst.

9. Define: Define inhibitor.

10. Define: Is a catalyst consumed in a reaction?

Answer Key

1. B) Lowers activation energy - Catalysts lower activation energy, speeding reactions without changing equilibrium.

2. B) Yes, unchanged - Catalysts are regenerated and remain chemically unchanged.

3. C) Slows or blocks reactions - Inhibitors slow down or block reactions by raising activation energy.

4. B) They lower activation energy - Enzymes lower activation energy, making reactions faster - a catalytic property.

5. MnO speeds up the decomposition without being consumed. MnO is a catalyst.

6. The enzyme lowers activation energy and is regenerated. Yes, enzymes are biological catalysts.

7. CO blocks/inhibits the normal function of hemoglobin. Yes, CO acts as an inhibitor.

8. A substance that speeds up a reaction by lowering activation energy and is regenerated unchanged.

9. A substance that slows or blocks a reaction by raising activation energy or blocking active sites.

10. No, it is regenerated and unchanged.