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Chemistry\_Questions\_0026

If a catalyst changes the activation energy of a forward reaction from 28.0 kcal/mol to 23.0 kcal/mol, what effect does it have on the reverse reaction?

- |   |
|---|
| A. The activation of the reverse reaction is lowered by 5 kcal/mol    |
| B. The activation of the reverse reaction is increased by 5 kcal/mol  |
| C. The activation of the reverse reaction is lowered by 23 kcal/mol   |
| D. The activation of the reverse reaction is increased by 23 kcal/mol |
| E. The activation of the reverse reaction is lowered by 28 kcal/mol   |
| F. The activation of the reverse reaction is increased by 28 kcal/mol |
| G. It cannot be determined from the information provided              |

Fluorine can react with oxygen to form oxygen difluoride according to the equation  $2 \text{F}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2 \text{OF}_2(\text{g})$ . What is the value of the equilibrium constant if at equilibrium  $[\text{O}_2] = 0.200 \text{ mol/L}$ ,  $[\text{F}_2] = 0.0100 \text{ mol/L}$ , and  $[\text{OF}_2] = 0.0633 \text{ mol/L}$ ?

- |                                   |
|-----------------------------------|
| A. 0.00401                        |
| B. 0.0100                         |
| C. 0.0633                         |
| D. 0.200                          |
| E. 200.                           |
| F. 200.                           |
| G. none of the answers is correct |

Hydrogen chloride is formed by the reaction of hydrogen and chlorine gases. For the reaction at 25°C,  $K_c = 2.6 \times 10^{33}$  and the enthalpy of reaction is -44 kcal/mol. Explain how the equilibrium will shift when the hydrogen chloride concentration is increased?

- |   |
|---|
| A. It will shift in the forward direction and be product-favored until equilibrium is re-established. |
|---|

B. It will shift in the forward direction and be reactant-favored until equilibrium is re-established.

C. It will shift in the reverse direction and be reactant-favored until equilibrium is re-established.

E. It cannot be determined from the information provided

For the reaction described in question 8 explain how the equilibrium will shift when the hydrogen concentration is decreased?

A. It will shift in the forward direction and be reactant-favored until equilibrium is re-established.

B. It will shift in the forward direction and be product-favored until equilibrium is re-established.

D. It will shift in the reverse direction and be reactant-favored until equilibrium is re-established.

E. It cannot be determined from the information provided

For the reaction described in question 8 explain how the equilibrium will shift when the temperature of the system increases?

A. It will shift in the forward direction and be product-favored until equilibrium is re-established.

B. It will shift in the forward direction and be reactant-favored until equilibrium is re-established.

C. It will shift in the reverse direction and be reactant-favored until equilibrium is re-established.

D. It will shift in the reverse direction and be product-favored until equilibrium is re-established.