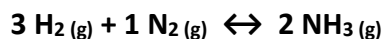


Le Chatelier's Principle Worksheet

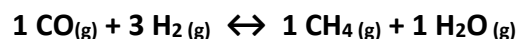
Organic Chemistry Tutor

1. Which of the following actions will cause the reaction to shift toward the left?



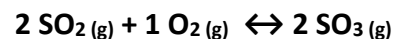
- A. Increasing the concentration of N_2 .
- B. Removing NH_3 from the reaction vessel.
- C. The addition of a catalyst.
- D. Removing H_2 from the reaction vessel.
- E. None of the above.

2. Which of the following actions will cause the concentration of CO to decrease in the reaction vessel?



- A. Adding more CH_4 to the reaction vessel.
- B. Removing H_2 from the reaction vessel.
- C. Increasing the partial pressure of H_2 .
- D. Adding an inert gas such as Xe to the reaction vessel.
- E. None of the above.

3. Which of the following statements is true if O_2 is removed from the reaction vessel?



- I. The reaction will shift to the right.
- II. The reaction will shift to the left.
- III. The concentration of SO_3 will increase.
- IV. The partial pressure of SO_2 will increase.

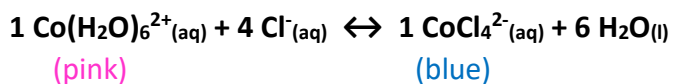
- A. I and III
- B. I and IV
- C. II and III
- D. II and IV
- E. I, III, and IV

4. Which of the following statements is false?



- A. Increasing the volume of the container will cause the reaction to shift to the left.
- B. Decreasing the volume of the container will cause the partial pressure of N_2 to increase.
- C. Adding an inert gas such as Neon will cause the pressure in the container to increase.
- D. Decreasing the partial pressure of NO will cause the partial pressure of N_2 to increase.
- E. The addition of a catalyst will speed up the reaction but will have no effect on the position of equilibrium.

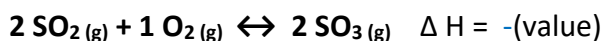
5. Which of the following statements is true?



$$\Delta H = +\text{value}$$

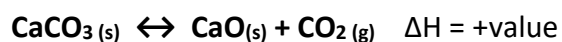
- A. Increasing the temperature will cause the solution to turn pink.
- B. Adding NaCl will cause the solution to become hot.
- C. Placing the solution in an ice bath will cause the solution to turn blue.
- D. Adding AgNO₃ will raise the temperature of the solution.
- E. Decreasing the temperature will reduce the concentration of the free Chloride ions.

6. Which of the following actions will cause the equilibrium constant K to increase for the exothermic reaction shown below?



- A. Removing O₂ from the chamber.
- B. The addition of a homogeneous catalyst.
- C. Increasing the temperature of the reaction chamber.
- D. Decreasing the temperature of the reaction chamber.
- E. Increasing the pressure by decreasing the volume of the chamber.

7. Which of the following statements is false?



- A. Adding CaCO₃ will increase the partial pressure of CO₂.
- B. Adding CaO to the reaction will have no effect on the position of equilibrium.
- C. Decreasing the volume of the container will cause the mass of CaCO₃ to increase.
- D. Decreasing the temperature will cause K to increase.
- E. Increasing the partial pressure of CO₂ will cause the temperature of the reaction chamber to increase.

Answers:

1. D
2. C
3. D
4. D
5. D
6. D
7. D