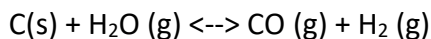


Answer on Question #76717 – Chemistry – Other

Task:

Consider the following reaction at equilibrium:



Which of the following conditions will increase the partial pressure of CO?

- A) decreasing the partial pressure of H₂O (g);
- B) removing H₂O (g) from the system;
- C) decreasing the volume of the reaction vessel;
- D) decreasing the pressure in the reaction vessel;
- E) increasing the amount of carbon in the system.

Solution:

- A) **Wrong.** By Le Chatelier's principle equilibrium will adjust to oppose the change, produce more H₂O, reducing CO.
- B) **Wrong.** Same explanation as for A.
- C) **Wrong.** Decreasing volume equivalent to increasing pressure, by Le Chatelier this is opposed by system decreasing its volume, i.e. equilibrium shifts to left, more H₂O and less CO (and H₂).
- D) **Correct.** By Le Chatelier equilibrium shifts to right, to produce a larger volume of gas so opposing the pressure decrease.
- E) **Wrong.** The C in the solid state (has a constant and small vapour pressure) is irrelevant to the equilibrium in the gaseous phase.

Answer: D) decreasing the pressure in the reaction vessel.