

16-2 Practice Problems

- Write the equilibrium expression for the oxidation of hydrogen to form water vapor.
 $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{H}_2\text{O}(\text{g})$
- Write the equilibrium expression for the formation of nitrosyl bromide.
 $2\text{NO}(\text{g}) + \text{Br}_2(\text{g}) \rightleftharpoons 2\text{NOBr}(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{NO}(\text{g}) + \text{O}_3(\text{g}) \rightleftharpoons \text{O}_2(\text{g}) + \text{NO}_2(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{CH}_4(\text{g}) + \text{Cl}_2(\text{g}) \rightleftharpoons \text{CH}_3\text{Cl}(\text{g}) + \text{HCl}(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{CH}_4(\text{g}) + \text{H}_2\text{O}(\text{g}) \rightleftharpoons \text{CO}(\text{g}) + 3\text{H}_2(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{CO}(\text{g}) + 2\text{H}_2(\text{g}) \rightleftharpoons \text{CH}_3\text{OH}(\text{g})$
- Write the equilibrium expression for the combustion of ethane at high temperature.
 $2\text{C}_2\text{H}_6(\text{g}) + 7\text{O}_2(\text{g}) \rightleftharpoons 4\text{CO}_2(\text{g}) + 6\text{H}_2\text{O}(\text{g})$
- Write the equilibrium expression for the decomposition of ethane.
 $\text{C}_2\text{H}_6(\text{g}) \rightleftharpoons \text{C}_2\text{H}_4(\text{g}) + \text{H}_2(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{Hg}(\text{g}) + \text{I}_2(\text{g}) \rightleftharpoons \text{HgI}_2(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{SnO}_2(\text{s}) + 2\text{CO}(\text{g}) \rightleftharpoons \text{Sn}(\text{s}) + 2\text{CO}_2(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{C}(\text{s}) + \text{CO}_2(\text{g}) \rightleftharpoons 2\text{CO}(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{FeO}(\text{s}) + \text{CO}(\text{g}) \rightleftharpoons \text{Fe}(\text{s}) + \text{CO}_2(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{KCl}(\text{l}) + \text{Na}(\text{l}) \rightleftharpoons \text{NaCl}(\text{l}) + \text{K}(\text{g})$
- Write the equilibrium expression for the following reaction.
 $\text{NaCl}(\text{s}) + \text{H}_2\text{SO}_4(\text{l}) \rightleftharpoons \text{HCl}(\text{g}) + \text{NaHSO}_4(\text{s})$
- Write the equilibrium expression for the following reaction.
 $\text{P}_4(\text{s}) + 6\text{NO}(\text{g}) \rightleftharpoons \text{P}_4\text{O}_6(\text{s}) + 3\text{N}_2(\text{g})$
- Write the equilibrium expression for the following reaction.
 $2\text{NO}(\text{g}) + 2\text{H}_2(\text{g}) \rightleftharpoons \text{N}_2(\text{g}) + 2\text{H}_2\text{O}(\text{l})$