

LECHÂTELIER - INTRODUCTION TO COLLEGE CHEMISTRY FORMATIVE ASSESSMENT



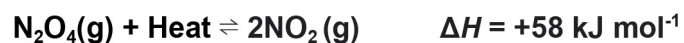
STUDENT CHECK FOR UNDERSTANDING

Concepts:
Relative Reaction Rates, Equilibrium Constant, LeChatelier's Principle (concentration, pressure, and temperature)

i

DIRECTIONS:

Consider the following endothermic, reversible reaction at equilibrium in a reaction vessel:



For each change to the system, determine what happens to the **number of molecules of the reactant, number of molecules of the product, and reaction rates (both directions)** at equilibrium compared to initial conditions. Use the terms “increase”, “decrease”, and “no change” for each scenario. For the “Shift Towards” column use the terms “reactant”, “product”, or “no shift”. Explain your reasoning in the “Justification” column.

Scenario	Number of N ₂ O ₄ molecules at equilibrium	Number of NO ₂ molecules at equilibrium	Equilibrium Reaction Rates	Shift Towards...	Justification
The partial pressures of N ₂ O ₄ and NO ₂ in the vessel are reduced.					
The temperature of the reaction is increased by submerging it in a warm water bath.					

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The number of moles of N_2O_4 in the reaction vessel is doubled.					
The partial pressures of N_2O_4 and NO_2 in the vessel are increased.					
The temperature of the reaction is decreased by submerging it in a cold water bath.					
The number of moles of NO_2 in the reaction vessel is doubled.					