

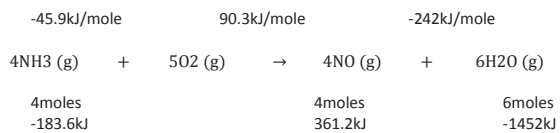
Question #78037, Chemistry / General Chemistry

Dear expert, please provide an answer to the question below within 12 hours.

What is the ΔH_o of the equation $4\text{NH}_3(\text{g}) + 5\text{O}_2(\text{g}) \rightarrow 4\text{NO}(\text{g}) + 6\text{H}_2\text{O}(\text{g})$? Given: $\Delta H_{fo} \text{NH}_3 = -45.9 \text{ kJ/mol}$, $\Delta H_{fo} \text{NO} = 90.3 \text{ kJ/mol}$, $\Delta H_{fo} \text{H}_2\text{O} = -242 \text{ kJ/mol}$.

- A. $\Delta H_o = 90.7 \text{ kJ}$
- B. $\Delta H_o = -90.7 \text{ kJ}$
- C. $\Delta H_o = 907 \text{ kJ}$
- D. $\Delta H_o = -907 \text{ kJ}$**
- E. None of the Above

Solution



$$\Delta H_o = \Sigma(\Delta H_{fo} \text{NO}, \Delta H_{fo} \text{H}_2\text{O}) - \Delta H_{fo} \text{H}_2\text{O}$$

$$\Delta H_o = 361.2 - 1452 - (-183.6) = -907\text{kJ}$$

Answer : D

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