Question #78037, Chemistry / General Chemistry

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

What is the Δ Ho of the equation 4NH3 (g) + 5O2 (g) \rightarrow 4NO (g) + 6H2O (g)? Given: Δ Hfo NH3 = -45.9 kJ/mol, Δ Hfo NO = 90.3 kJ/mol, Δ Hfo H2O = -242 kJ/mol.

A. ΔHo = 90.7 kJ B. ΔHo = –90.7 kJ C. ΔHo = 907 kJ <mark>D. ΔHo = –907 kJ</mark> E. None of the Above

Solution

-45.9kJ/mole 90.3kJ/mole -242kJ/mole 4NH3 (g) + 502 (g) \rightarrow 4N0 (g) + 6H20 (g) 4moles 4moles 6moles -183.6kJ 361.2kJ -1452kJ $\Delta Ho = \Sigma (\Delta H fo NO, \Delta H fo H2O) - \Delta H fo H2O$ $\Delta Ho = 361.2 - 1452 - (-183.6) = -907 kJ$

Answer : D

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