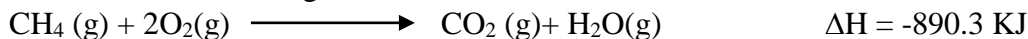


Thermochemistry/Practice-Thermochemical Equations and Stoichiometry

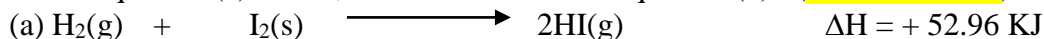
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Show all the work for the calculations and give the answers in the correct significant figures.

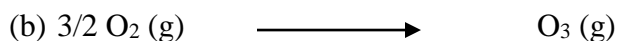
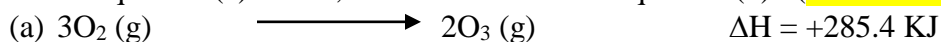
- 1) Indicate if the following reactions are endo or exothermic.



- 2) Given equation (a) below, calculate the ΔH for equation (b). (Ans: -26.48 KJ)



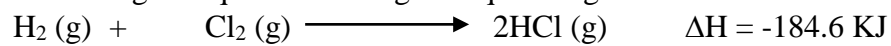
- 3) Given equation (a) below, calculate the ΔH for equation (b). (Ans: +142.7 KJ)



- 4) Write the thermochemical equation that expresses that at 0°C ice melts by absorbing 334 J of heat per gram. (Ans: +6.02 KJ)

- 5) The complete combustion of liquid octane, C_8H_{18} , produces carbon dioxide and water at 25°C and at constant pressure, it gives 47.9 kJ of heat per gram of octane. Write the thermochemical equation to show this information. (Ans: $-1.09 \times 10^4 \text{ KJ}$)

6) Answer the following two questions using the equation given below.



a) What is the enthalpy change associated with the formation of 5.67 mol HCl gas in the following reaction? (Ans: -523 KJ)

b) What is the enthalpy change when 12.8 g of H₂ gas reacts with excess Cl₂ gas to form HCl? (Ans: -1.17 x 10³ KJ)