

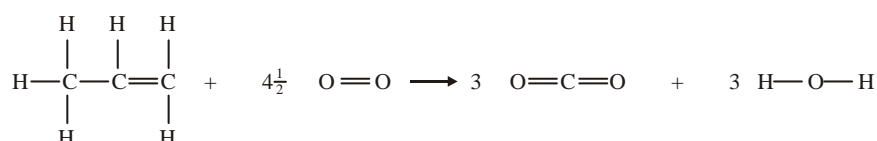
2.1 – ENERGETICS – PPO6



Name Form

- 6) a) Use the mean bond enthalpy data from the table and the equation given below to calculate a value for the standard enthalpy of combustion of propene. All substances are in the gaseous state.

Bond	C = C	C—C	C—H	O = O	O = C	O—H
Mean bond enthalpy/ kJ mol ⁻¹	612	348	412	496	743	463



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 (3)

- b) State why the standard enthalpy of formation, ΔH_f^\ominus , of oxygen is zero.

..... (1)

- c) Use the data from the table below to calculate a more accurate value for the standard enthalpy of combustion of propene.

Compound	C ₃ H ₆ (g)	CO ₂ (g)	H ₂ O(g)
Standard enthalpy of formation, ΔH_f^\ominus kJ mol ⁻¹	+20	-394	-242

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 (3)

- d) Explain why your answer to part (b) is a less accurate value than your answer to part (c).

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 (2)

- e) Define the term standard enthalpy of combustion, ΔH_c^\ominus

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 (3)