

## The different types of $\Delta H$

### Standard enthalpy change of formation

Standard enthalpy change of formation,  $\Delta_f H^\ominus$ , is the enthalpy change when 1 mole of a compound is formed from its elements in their standard states under standard conditions, e.g.  $2C_{(s)} + 3H_{2(g)} + \frac{1}{2}O_{2(g)} \rightarrow C_2H_5OH_{(l)}$

### Standard enthalpy change of combustion

Standard enthalpy change of combustion,  $\Delta_c H^\ominus$ , is the enthalpy change when 1 mole of a substance is completely burned in oxygen under standard conditions with all reactants and products in their standard states.

### Standard enthalpy change of reaction

Standard enthalpy change of reaction,  $\Delta_r H^\ominus$ , is the enthalpy change when a reaction occurs in the molar quantities shown in the chemical equation, under standard conditions with all reactants and products in their standard states.