

Energetics – (OCR)

Enthalpy change is the amount of heat energy taken in or given out during any change in a system provided the pressure is constant and that standard conditions are 100 kPa and a specified temperature, usually 298 K.

Standard enthalpy change of formation

Enthalpy change when 1 mole of a substance is formed from its constituent elements with all reactants and products in standard states under standard conditions. A pure element in its standard state has a standard enthalpy of formation of zero.

Write down the equations for the standard enthalpy of formation of the following:

$C_2H_6(g)$

$H_2O(l)$

$NH_3(g)$

$C_3H_7OH(l)$

$CH_5Cl(l)$

$K_2O(s)$

Standard enthalpy change of combustion

Enthalpy change when 1 mole of a substance is formed from its constituent elements with all reactants and products in standard states under standard conditions.

Write down the equations for the standard enthalpy of formation of the following:

$C_3H_8(g)$

$N_2(g)$

$C_4H_{10}(g)$

$CH_3OH(l)$

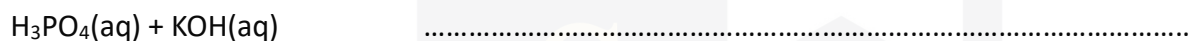
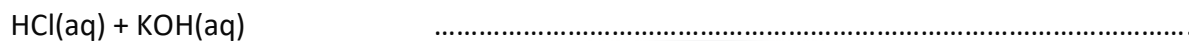
$Ca(s)$

$C_6H_{14}(l)$

Standard enthalpy change of neutralization

Enthalpy change when 1 mole of water is formed in a reaction between an acid and alkali under standard conditions.

Complete the following equations for acid reacting with bases. You will observe all will give water as one of the product.



Exam Question

Define *standard enthalpy change of combustion*.

Include the standard conditions that are used.

What is meant by the term *standard enthalpy change of formation*?
Give the standard conditions.

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