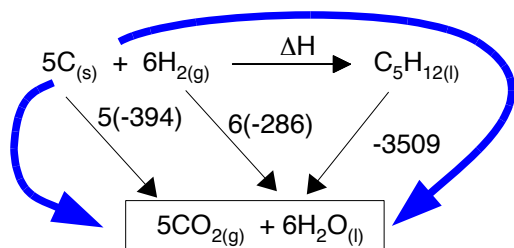


## Chemguide – answers

### HESS'S LAW AND SIMPLE ENTHALPY CALCULATIONS

1. The enthalpy change accompanying a chemical change is independent of the route by which the chemical change occurs.

2.

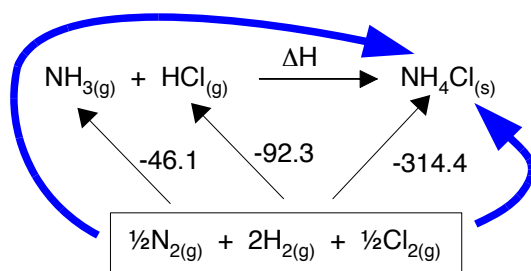


$$\Delta H - 3509 = 5(-394) + 6(-286)$$

$$\Delta H = +3509 + 5(-394) + 6(-286)$$

$$\Delta H = -177 \text{ kJ mol}^{-1}$$

3.



$$-46.1 - 92.3 + \Delta H = -314.4$$

$$\Delta H = -314.4 + 46.1 + 92.3$$

$$\Delta H = -176 \text{ kJ mol}^{-1}$$

These are straightforward examples and, if you got them wrong, it is essential that you work out why. If you got them right, don't assume that you are now competent to answer all similar questions. You need to find a whole lot of other examples to practise - including more complicated ones.

It would be a good idea to do this before you went any further with the energetics section of Chemguide.