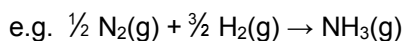


STARTER FOR 10!!!

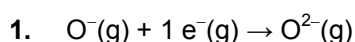
10.1. Important definitions

For each of the transformations represented by the equations 1-5, name the enthalpy change and provide a full definition.



Name: *The standard molar enthalpy change of formation of ammonia*.....

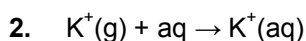
Definition: *The enthalpy change when one mole of a compound is formed from its elements under standard conditions, all reactants and products in their standard states*



Name:(1 mark)

Definition:

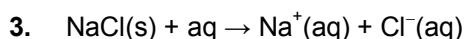
.....(1 mark)



Name:(1 mark)

Definition:

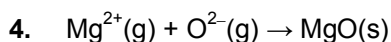
.....(1 mark)



Name:(1 mark)

Definition:

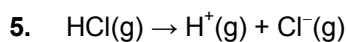
.....(1 mark)



Name:(1 mark)

Definition:

.....(1 mark)



Name:(1 mark)

Definition:

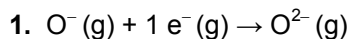
.....(1 mark)



STARTER FOR 10!!!

10. Thermodynamics answers

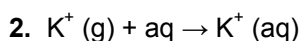
10.1. Important definitions



Name: Second electron affinity of oxygen

(1 mark)

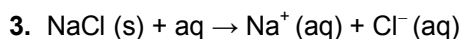
Definition: The enthalpy change when a mole of electrons is added to a mole of gaseous oxygen ions each with a single negative charge, forming one mole of gaseous ions each with a two negative charge. (1 mark)



Name: Molar enthalpy of hydration

(1 mark)

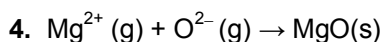
Definition: The enthalpy change when one mole of gaseous ions dissolve in sufficient water to give an infinitely dilute solution (1 mark)



Name: Molar enthalpy change of solution

(1 mark)

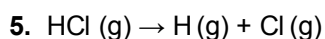
Definition: The enthalpy change when one mole of an ionic substance dissolves in sufficient water to give an infinitely dilute solution (1 mark)



Name: Lattice formation enthalpy

(1 mark)

Definition: The enthalpy change when one mole of an ionic substance is formed from its gaseous ions under standard conditions (1 mark)



Name: The H-Cl bond enthalpy in hydrogen chloride

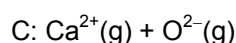
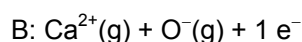
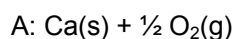
(1 mark)

Definition: The enthalpy change when one mole of gaseous hydrogen chloride molecules breaks its covalent bond to form a gaseous hydrogen radical and a gaseous chlorine radical (1 mark)

10.2. Born Haber cycles

1. Missing enthalpy change is the first ionisation energy of calcium

(1 mark)



(2 marks for each of A-C; 1 mark for correct species, 1 mark for correct state symbols)

2. The second electron affinity is positive as you are adding an electron to an already negative ion. Therefore energy is needed to overcome the repulsion.

(2 marks)