

06-1-M-10

Which statement concerning the reaction of aqueous ammonia with hydrochloric acid is correct?

- A The reaction is exothermic.
- B A white precipitate is formed.
- C Ammonium chloride and chlorine are produced.
- D The product ammonium chloride is a covalent compound.

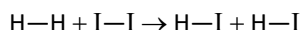
06-1-M-11

Different volumes of 2.0 mol/dm^3 potassium hydroxide solution and 2.0 mol/dm^3 sulphuric acid are mixed in a polystyrene cup. In which combination would the temperature rise be the greatest?

	Volume of KOH (aq)/ cm^3	Volume of H_2SO_4 (aq)/ cm^3
A	20.0	40.0
B	30.0	30.0
C	40.0	20.0
D	45.0	15.0

06-1-M-12

The formation of hydrogen iodide from hydrogen and iodine is an endothermic reaction.

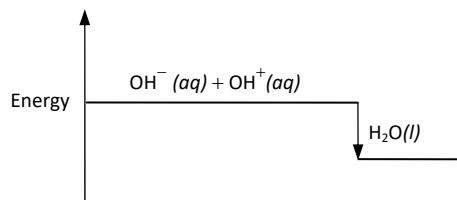


What may be deduced from this information?

- A Then number of bonds broken is more than the number of bonds formed.
- B The formation of $\text{H}-\text{I}$ bonds absorb energy.
- C The products possess less energy than the reactants.
- D The total energy change in bond formation is less than that in bond breaking.

06-1-M-13

The diagram below depicts an energy level diagram.

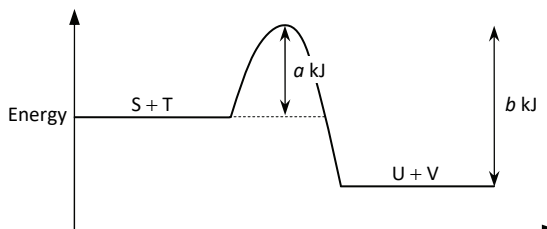


Choose the correct conclusion for the diagram above.

- A Heat is released in this reaction
- B Heat is needed to initiate the reaction
- C OH^- ions contain more energy than H^+ ions
- D The product contains more energy than the reactants

06-1-M-14

The diagram below shows the energy profile of a reaction.



Choose the correct statement for the diagram above.

- A The activation energy is $b \text{ kJ}$
- B The reaction is endothermic
- C The heat of reaction is $-(b - a) \text{ kJ}$
- D b value increases with the concentration of the reactants

06-1-M-15

0.12 g of magnesium reacts with excess hydrochloric acid to produce hydrogen gas. Choose the correct statements that describe the reaction.

[Relative molecule mass of $\text{H} = 1$, $\text{Mg} = 24$, $\text{Cl} = 35.5$ and 1 mol gas occupies 24 dm^3 at room temperature and pressure]

- I This is a redox reaction
- II Mass of the salt formed is 0.30 g
- III $\text{Mg} + 2\text{H}^+ \rightarrow \text{Mg}^{2+} + \text{H}_2$
- IV Volume of gas released is 120 cm^3

- A I and II only
- B II and III only
- C I, III and IV only**
- D II, III and IV only