

13 Periodicity Revision Helpsheet

Lesson Objectives	Tasks		
Describe trends in the reactions of the elements with water, limited to Na and Mg	Write an equation for the reaction of sodium with water	Write an equation for the reaction of magnesium with cold water	Write an equation for the reaction of magnesium with steam
Describe trends in the reactions of the elements Na, Mg, Al, Si, P and S with oxygen, limited to the formation of Na_2O , MgO , Al_2O_3 , SiO_2 , P_4O_{10} and SO_2	Write an equation for the reaction of each of the following elements with oxygen: Na, Mg, Al, Si, P and S with oxygen	Describe the changes in oxidation state that occur in each of these reactions	Describe the observations that you would make when the following elements react with oxygen: Na, Mg, Al, Si, P and S with oxygen
Explain the link between the physical properties of the highest oxides of the elements Na - S in terms of their structure and bonding	Describe the bonding in sodium, magnesium and aluminium oxide and link their structure with their properties. Explain what is different about aluminium oxide compared to the other two.	Describe the structure of silicon oxide and link the structure to its properties	Describe the structure of phosphorous and sulphur oxides and link their structure to their properties
Describe the reactions of the oxides of the elements Na - S with water, limited Na_2O , MgO , Al_2O_3 , SiO_2 , P_4O_{10} and SO_2	Write symbol equations to show the reactions between water and the following oxides: Na_2O , MgO , Al_2O_3 , SiO_2 , P_4O_{10} and SO_2		
Know the change in pH of the resulting solutions across the Period	Indicate the pH of the products of the reactions between water and the following oxides: Na_2O , MgO , Al_2O_3 , SiO_2 , P_4O_{10} and SO_2		
Explain the trends in these properties in terms of the type of bonding present	Explain why sodium and magnesium oxides produce hydroxide ions and why magnesium oxide produces less hydroxide ions than sodium	Explain why aluminium and silicon dioxide are insoluble in water	What type of bonding is present in the two oxides that form acidic solutions with water?
Write equations for the reactions which occur between these oxides and given simple acids and bases	Write equations for the reaction of sodium oxide and magnesium oxide with an acid of your choice.	Aluminium oxide is amphoteric, what does this mean?	Write equations for the reaction of silicon dioxide and phosphorous pentoxide with sodium hydroxide