

## Year 10 Chemistry 2008

### Chemical formulae and Chemical Equation Study Sheet

Please answer the following questions. Write the answers into your exercise books.

Q1 Use the essential ions sheet to work out the formulae of the following

Sodium bromide	Potassium hydrogencarbonate	Iron(11) sulphate	Aluminium nitrate	Hydrogen hydroxide
Lithium fluoride	Silver oxide	Chromium hydroxide	Magnesium carbonate	Hydrogen sulphate
Ammonium carbonate	Lithium hydroxide	Barium oxide	Iron(111) sulphide	Chromium sulphate

Q2. A balanced chemical equation can be written in four steps. Write the reaction in words, Change the chemical names into their correct symbols and formulae. Include the physical states and finally balance.

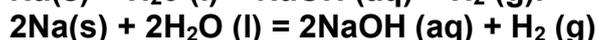
The following questions relate to these four steps.

- What symbols should we use to describe the physical states?
- Chemists and other scientists always balance chemical equations. Please explain why this is so important. (Hint, refer to the law of conservation of mass)

PART B, read the following statements and write balanced chemical equations. The first has been completed as an example

Example grey sodium metal was added to colourless water. The metal reacts sizzling on the surface. It dissolves producing sodium hydroxide and it produces some hydrogen gas

**Sodium + water = sodium hydroxide + hydrogen**



Try these:

- Some grey magnesium ribbon was added to colourless dilute hydrochloric acid. The metal dissolves producing magnesium chloride and produces some hydrogen gas.
- Some zinc metal is added to copper(11) sulphate solution. The zinc becomes coated with copper and colourless zinc sulphate solution is produced.
- Some colourless hydrogen gas is mixed with colourless oxygen gas. The mixture is sparked and it explodes producing steam which condenses to liquid water.

- f. Magnesium ribbon is burnt in carbon dioxide gas. It burns spluttering as it goes. Black carbon is produced and some magnesium oxide solid.
- g. Green copper(II) carbonate is heated in a test tube. It slowly turns into copper(II) oxide (black) and produces some carbon dioxide gas.
- h. The carbon dioxide produced in the last reaction is bubbled through clear colourless calcium hydroxide solution. The solution turns cloudy white and produces some calcium carbonate solid. And a little water
- i. Yellow sulphur is heated in a Bunsen flame it quickly turns black and burns with a blue flame. It produces sulphur dioxide gas which has a choking smell.
- j. The sulphur dioxide produced in the last reaction tumbles round and round and lands onto some water in a beaker (**it's an adventure!**) It quickly dissolves producing some hydrogen sulphite (a strongly acidic solution)
- k. Sodium hydroxide pellets dissolve quickly in dilute sulphuric acid. It produces some sodium sulphate and water.