

Qualitative Practical

Effect of acid with metals, carbonates, oxides and hydroxides.

Acid + metal $\longrightarrow$ salt + Hydrogen

Acid + metal hydroxide $\longrightarrow$ salt + water

Acid + metal oxide $\longrightarrow$ salt + Water

Acid + metal carbonate $\longrightarrow$ salt + Carbon dioxide + water

Acid + metal hydrogen carbonate $\longrightarrow$ salt + Carbon dioxide + water

Acid + metal sulfite $\longrightarrow$ salt + sulfur dioxide + water

Hydrogen can be tested using a lighted splint that pops when it is put in the presence of hydrogen. Water can also be tested when copper anhydrous sulphate turns from white to blue when water is present. Carbon dioxide is tested by bubbling it through lime water and if the lime water turns cloudy then carbon dioxide is present.

- Carbonates in group one do not decompose with heat however the in group 2 always producing an oxide and carbon dioxide gas

Metal carbonate $\xrightarrow{\text{HEAT}}$ metal oxide + carbon dioxide

Reactions with Aqueous silver nitrate

	Iodide	Chloride	Bromide
Colour of precipitate formed	Yellow	White	Cream

Chloride can react with bromide to form bromine and it can also react with iodide to form iodine. When bromine water is added to an alkene it turns colourless this is a good test for alkenes.

<u>Compound of Group 2 Metal</u>	<u>Description</u>
Oxide	Apart from beryllium they react with acids to form a salt and water they also form a hydroxide in water and are obtained from a carbonate.
Hydroxide	They are all soluble in water forming alkaline solutions increasing in solubility as you go down the group. All have the formula $M(OH)_2$.
Carbonate	They react with dilute acids and decompose to form an oxide and carbon dioxide. All have the formula MOH_2 . More difficult to decompose down the group.