Properties of chlorine (Level 1) exam tips: Read these please!

Properties of chlorine gas (Cl2) *– although aqueous chlorine (chlorine water) is specified in the AS*

• Cl atom is non metal

• Cl2 is a covalent molecule

• boiling point is **-**34 °C (so Cl2 is a gas at room temperature)

• very poisonous

• pale yellow green gas

• dense (heavier than air)

• does not conduct electricity

• very good oxidant/oxidising agent (meaning chlorine itself is reduced, gains electrons)

chlorine gas + water 🡺 hypochlorous acid + hydrochloric acid

Cl2(g) + H2O(l) 🡪 HOCl(aq) + HCl(aq)

|  |  |
| --- | --- |
| observation  litmus paper turns red then white | reason  HCl is formed…  which is an acidic solution…  which means that the concentration of H+ ions are increased…  as they are released into solution by the displacement of HCl  chlorine water is a bleaching agent |
| everyday uses  disinfectant in hospitals  and  swimming pools  to stop spread of infectious disease | reason  HOCl attacks cell wall of microbes…  so enzymes inside the cells are denatured…  and structures inside the cells are destroyed…  must be continually added to the pool…  because the HOCl breaks down by sunlight…  or reacts with ammonia…  or is broken down into single atoms…  therefore the chlorine is not effective as a disinfectant anymore |

Also…”don’t be daft”

be careful here… damp litmus paper would go red and then white

why? chlorine water is an acid and a bleach

give plenty of detail about why chlorine is used as a disinfectant, include the equation with water

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