



- 1 a What would you see when colourless chlorine water is added drop-wise to colourless aqueous potassium iodide?

brown solution

- b Write an ionic equation for the reaction taking place. $2\text{I}^- + \text{Cl}_2 \rightarrow \text{I}_2 + 2\text{Cl}^-$
- c What does this tell you about the oxidising power of chlorine relative to iodine, and explain why one has greater oxidising power than the other.

Cl_2 is stronger oxidising agent than I_2

because chlorine atoms are smaller and there is less shielding and so it gains an electron more easily than iodine

- 2 Silver nitrate solution was added to an acidified solution of a compound containing a halide ion. A cream precipitate formed that re-dissolved when concentrated ammonia was added.

- a Explain why the solution is acidified before silver nitrate is added.

to react with and remove any ions (e.g. carbonate) that would also give a precipitate

- b Identify a suitable acid for this. **nitric acid**

- c Identify the halide ion in the compound. **Bromide, Br^-**

- d Write an ionic equation for the formation of the cream precipitate.



- e Write an ionic equation for the reaction of the cream precipitate with concentrated ammonia.

