

# 11 The halogens – Part 2 —Answers

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## Answers

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Work through these after trying the questions yourself.

**11.1** It increases down the group.

**11.2** The ions get larger, so the outer electron is further from the nucleus and held less tightly, so it is given away (donated) more easily.

**11.3** (a) white \ (b) cream \ (c) yellow.

**11.4** The precipitate dissolves in dilute ammonia (silver bromide needs concentrated, and silver iodide does not dissolve).

**11.5** Iodide is a much stronger reducing agent than chloride, so it reduces (is oxidised by) the sulfuric acid to form iodine; chloride is too weak a reducing agent to do this.

**11.6** It is bromide, Br<sup>-</sup>. A cream silver-halide precipitate is silver bromide, and silver bromide dissolves only in *concentrated* ammonia (silver chloride dissolves in dilute; silver iodide does not dissolve at all).