

15 Halogenoalkanes – Part 1 — Answers

Answers

Work through these after trying the questions yourself.

15.1 An alkane with one or more halogen atoms in place of hydrogen (a C–X bond).

15.2 How many carbon atoms are joined to the carbon that holds the halogen (one, two or three).

15.3 The C–X bond is polar, so the carbon is slightly positive ($\delta+$); a nucleophile (with a lone pair) is attracted to this positive carbon.

15.4 (a) an alcohol \ (b) an amine.

15.5 Warm it with silver nitrate in ethanol; a silver halide precipitate forms — white (Cl), cream (Br) or yellow (I).

15.6 It is nucleophilic substitution. The cyanide ion (CN^-) is the nucleophile; it replaces the halogen and joins on through *its own carbon* (forming a nitrile), so the product gains one extra carbon.