

Chemguide – answers

ALDEHYDES AND KETONES: THE TRIIODOMETHANE (IODOFORM) REACTION

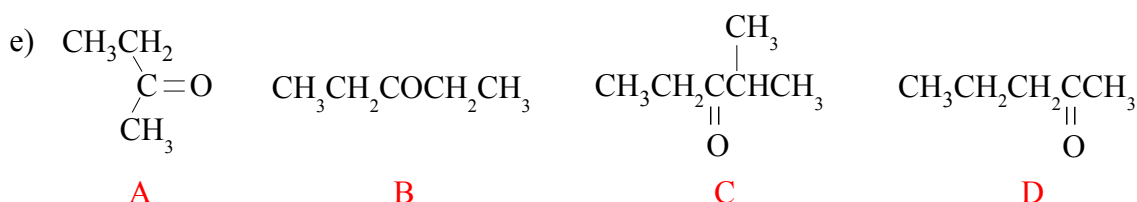
1. a) *Either:* Add iodine solution followed by enough sodium hydroxide solution to remove the colour of the iodine. Warm very gently if nothing happens in the cold.

Or: Add potassium iodide solution followed by sodium chlorate(I) solution (sodium hypochlorite solution). Warm very gently if nothing happens in the cold.

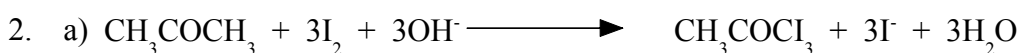
b) You get a pale yellow precipitate with a faintly antiseptic smell.

c) It shows that there is a CH₃ group attached directly to the C=O group.

d) Ethanal. (That's it! No other aldehydes have a CH₃ group attached directly to the C=O group.)



A and D. (These are the only compounds with a CH₃ group attached directly to the C=O group. It isn't good enough that there is a CH₃ group nearby (as in C). It has to be directly attached.)



(There's no very simple way of working this out unless you remember that half of the iodine ends up in iodide ions. If you remember that, then balancing it is fairly easy.)

