

Chemguide – questions

NITRILES: PREPARATION

1. Nitriles can be made from

- a) halogenoalkanes,
- b) amides,
- c) aldehydes,
- d) ketones.

For each of these types of reaction, give an example of the preparation of a nitrile containing *four* carbon atoms. Where you are asked for a structure, simple structures are OK – for example, $\text{CH}_3\text{CH}_2\text{CN}$. In each case, give

- (i) the structure of the compound you are starting with,
- (ii) what you would react it with,
- (iii) the essential conditions for the reaction,
- (iv) the structure of the nitrile formed.

2. Why is the formation of nitriles in most of the ways covered in Q1 a useful thing to do in organic chemistry?