

## Chemguide – questions

### NITRILES: INTRODUCTION

1. a) Draw the structural formulae for the following compounds. You can simplify hydrocarbon groups to, for example,  $\text{CH}_3\text{CH}_2$ , but should show the structure of the nitrile group.

(i) propanenitrile

(ii) ethanenitrile

(iii) 3-methylbutanenitrile

b) Give the name of  $\text{CH}_3\text{CH}_2\underset{\text{OH}}{\text{CH}}\text{CN}$

2. a) What intermolecular forces are present in liquid ethanenitrile?

b) Ethanenitrile has a boiling point of  $82^\circ\text{C}$ , which is high for a molecule of its size. Explain why.

c) Explain why ethanenitrile is freely soluble in water.

d) Solubility of the nitriles falls off very quickly as the chain length gets bigger. Explain why.