

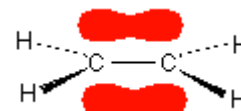
Chemguide – questions

ALKENES: INTRODUCTION

1. a) Draw the structural formulae for
 - (i) ethene
 - (ii) propene
- b) There are four isomers of C_4H_8 containing a carbon-carbon double bond. Draw their structural formulae.
- c) Two of the isomers you should have drawn in part (b) are geometric isomers. Name the isomers and explain how this geometric isomerism arises.

2. One of the isomers of C_4H_8 is but-1-ene.
 - a) What physical state would you expect but-1-ene to be in at room temperature?
 - b) Would you expect but-1-ene to be soluble in water? Briefly explain your answer.
 - c) Would you expect but-1-ene to dissolve in hexane? Briefly explain your answer.

3. This diagram, taken from the Chemguide page, shows the bonding in ethene.



- a) Describe the meaning of the various types of line joining the atoms together.
- b) What exactly are the two areas shown in red on the diagram?
- c) Alkenes like ethene have a much wider range of reactions than alkanes like ethane. Use this diagram to help to explain why that is possible. Include the word *electrophile* in your explanation, making clear what it means.