# Stereoisomerism in alkenes – answers

*Education in Chemistry*
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**This worksheet accompanies the article ‘Molecular motors power on’. Download the worksheet, answer sheet and full article (MS Word or pdf) from** [rsc.li/2JcLfbX](https://rsc.li/2JcLfbX)



1. a. Z isomer E isomer



 b. Z isomer E isomer



 c. Z isomer E isomer



 d. Z isomer E isomer



 e. Z isomer E isomer



2.

 Z isomer E isomer Z isomer



3.

*cis* but-2-ene *cis 1-bromo-*1,2-dichloroethene *Can’t label cis/trans*

4. a. i. Step **A** and Step **C** are the isomerisation steps.

 ii.

**trans**

**cis**

**trans**

**cis**

b. Second generation molecular motors do not show geometric isomerism because the *stator* section of the molecule is symmetrical meaning that the groups on either side of the alkene carbon atom are identical.