Alkene Halogenation

Sam White 13A

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1.0.0

Revision History

Revision	Date	Author(s)	Description
1.0.0	13.10.2016	Sam White	Initial Version

1 Sequential Method

This method describes the bromination of an alkene.

1. Measure out $0.5\,cm^3$ of bromine into a hydrocarbon solvent in a test tube.
2. Add a few drops of the alkene to the test tube and observe the colour change.

1.1 Diagram

N/A

1.2 Reasons for Method

- A hydrocarbon solvent is used instead of water as otherwise the water might act as a nucleophile and would react with the alkene to produce an alcohol.
- A very small voulme of bromine is used since it is harmful and highly flammable.

- Bromine is used as the halogen since it has a distinctive orange colouring and the dibromoalkane is colourless hence the reaction progress can be easily observed.

1.3 Uncertainties in any Measurements

N/A

2 Results and Observations

The solution of the bromine dissolved in the hydrocarbon solvent is originally orange. When the alkene is added the solution turn colourless.

2.1 Processed Results

N/A

2.2 Calculations

N/A

2.3 Uncertainty in Final Answer

N/A

3 Conclusions Drawn

During the reaction the bromine reacts with the alkene is form a dibromoalkane in an electrophillic addition reaction. This occurs as the high negative charge density in the C=C bond induces a dipole moment in the bromine molecule, hence resulting in the electrophillic addition reaction. This thus has the result of making the orange solution turn colourless.

A similar reaction occurs with hydrogen halides, however a permanent dipole moment already exists in the molecule and a halogenoalkane is produced instead of a dihalogenoalkane.

4 Evaluation

4.1 Systematic Errors

N/A

4.2 Uncertainties

N/A