**Major and minor products from an addition reaction**

#### 2022

#### Propose a series of reactions to convert Compound B into Compound D.

#### A couple of chemical formulas Description automatically generated

In your answer you should:

• give the reagents used for any step(s) in the chemical synthesis along with any necessary conditions

• state the type of reaction occurring in each step

#### • identify any major / minor products formed.

#### 2021

#### Compound 1 and Compound 3 will both react with hydrogen bromide, HBr. However, in one case, two organic products are formed, while in the other, only one organic product is produced.

#### A picture containing table Description automatically generated

Analyse the reactions of **Compound 1** and **Compound 3** with hydrogen bromide, HBr.

In your answer you should:

• state the type of reaction occurring and justify your choice

• give the structural formulae of all products, and identify major / minor products where appropriate

#### • explain how the major and minor products were identified.

#### 2020 Draw the minor product of the reaction of propene + HCl (aq)

#### 2019

#### Explain how you identified the major and minor products in the reaction of propene with hydrogen bromide solution, HBr(*aq*).

#### 2018

When but-1-ene is reacted to form bromobutane, C4H9Br, two organic products are formed.

Analyse this reaction by:

• stating the reagent required

• identifying the type of reaction and justifying your choice

• explaining why there is a mixture of organic products.

#### *Support your answer by drawing structural formulae for but-1-ene and the organic products.*

#### 2016

The reaction between propene, C3H6(*g*), and hydrogen chloride, HCl(*g*), produces a mixture of products.

#### One of these products, the major product, is made in higher proportions than the other, the minor product.

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#### (i) Draw and name the major and minor products for this reaction.

#### (ii) Elaborate on the reaction that occurs between propene and hydrogen chloride.

#### 2015

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In Reaction 1, propan-2-ol can be converted to propene.

In Reaction 2, propene can be converted back to propan-2-ol.

Analyse BOTH of these reactions by:

• describing the reagents and conditions needed for each reaction to occur

• identifying each type of reaction and explaining your choice

#### • explaining why Reaction 1 forms only a single organic product, but Reaction 2 forms a mixture of organic products.

#### 2014

#### Explain why Reaction 1 is classified as an addition reaction.

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#### Explain why compound A is the major product for Reaction 1 shown above

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