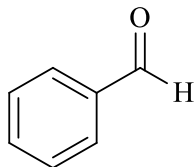


Marks
8

- Propene can be converted into 1,2-dimethyl-1-phenylpropene using a sequence of 6 reactions. Demonstrate your knowledge of Grignard reactions by suggesting a plausible sequence. Make sure you draw the correct structure for each intermediate product and clearly indicate the reagent(s) required for each reaction. The following list of suggested reagents is sufficient to accomplish all necessary reactions, but you may use other reagents if you wish. One of the intermediates is shown for you.

Suggested reagents:



HBr

dilute HCl

 $K_2Cr_2O_7 / H^+$

conc. HCl

Mg

 CH_3MgBr

Reaction scheme for the synthesis of 1,2-dimethyl-1-phenylpropene from propene:

Propene (starting material) is converted to an intermediate product using reagent(s) in a box.

The intermediate product is converted to another intermediate product using reagent(s) in a box.

The second intermediate product is converted to a third intermediate product using reagent(s) in a box.

The third intermediate product is converted to 1-phenylpropan-2-ol using reagent(s) in a box.

1-phenylpropan-2-ol is converted to an intermediate product using reagent(s) in a box.

The intermediate product is converted to another intermediate product using reagent(s) in a box.

The final intermediate product is converted to 1,2-dimethyl-1-phenylpropene using reagent(s) in a box.