

9.7: Answers to Practice Questions Chapter 9

9.1 Predict the percentage yield of each product for monochlorination of isobutane by calculation, and compare your calculated numbers to the experiment results. Are they consistent?



Calculation:

Amount of 1°-chloride: 9 (number of 1°hydrogens) × 1.0 (relative reactivity) = 9.0

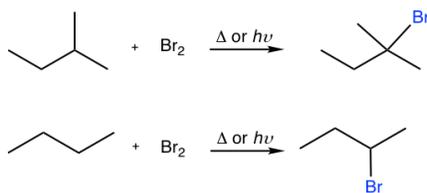
Amount of 3°-chloride: 1 (number of 3°hydrogens) × 3.8 (relative reactivity) = 3.8

yield% of 1°-chloride: 8.0/12.8 = 70.3 %

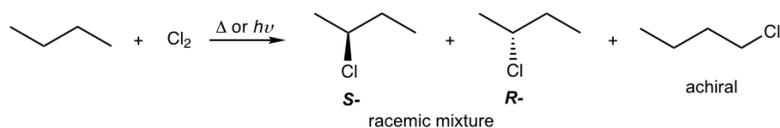
yield% of 3°-chloride 3.8/12.8 = 29.7 %

The calculated values are consistent to the experiment results, not exactly same though.

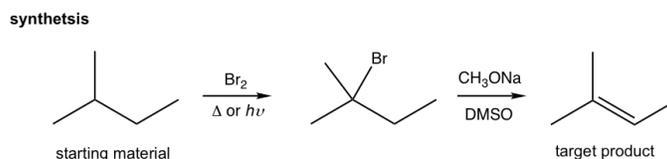
9.2 Show the major bromination product of following reactions.



9.3 Show all the mono-chlorination products of butane with any stereoisomers when applied.



9.4 Design the synthesis route.



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