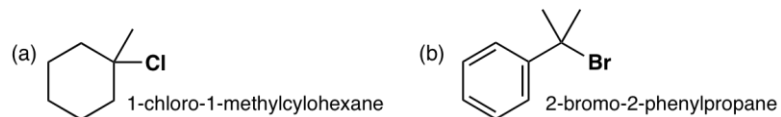


Solutions to Exercises, Chapter 15

15.1

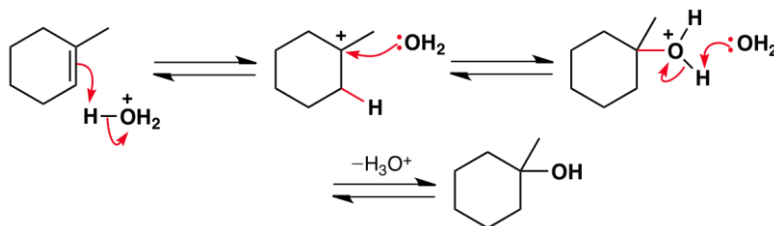


15.2 (a) The enantiomers of products **1** and **2** in Scheme 15.4 are **3** and **4**, respectively, and the configurations of their chiral centres are given in the structures.



(b) The enantiomeric *cis* pair **1** and **3** are formed in equal yields, as are the enantiomeric *trans* pair **2** and **4**. In principle, however, the (equal) yields of **1** and **3** will be different from the (equal) yields of their diastereoisomers **2** and **4**.

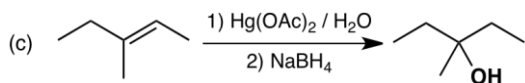
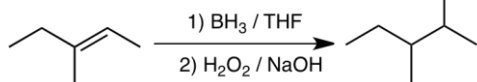
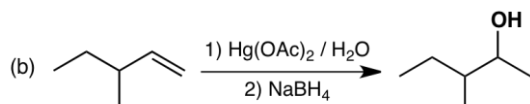
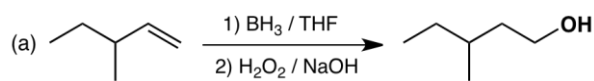
15.3



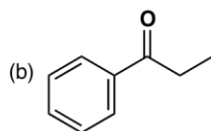
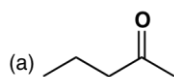
15.4



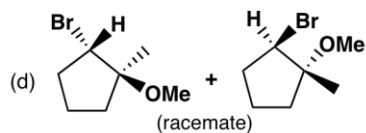
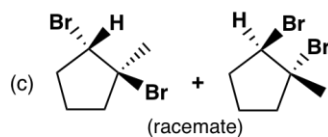
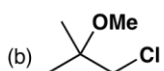
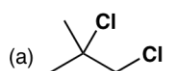
15.5



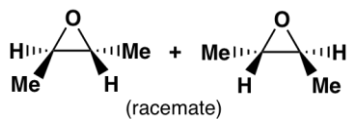
15.6



15.7



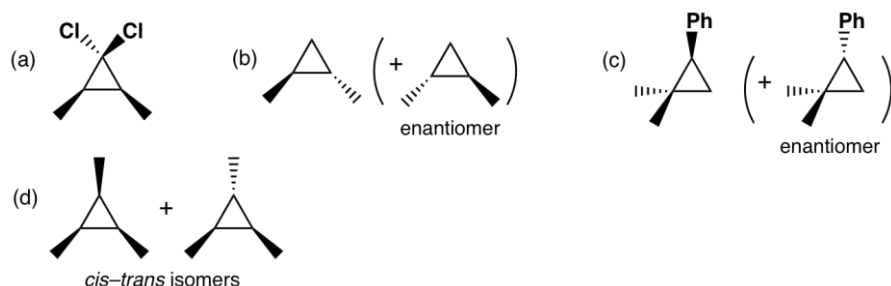
15.8



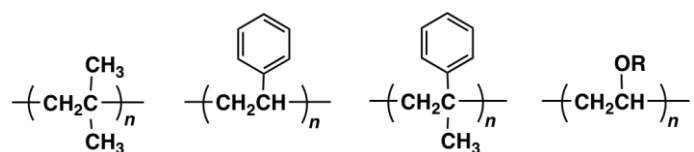
15.9



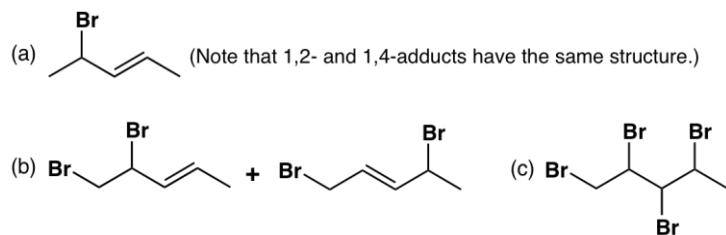
15.10



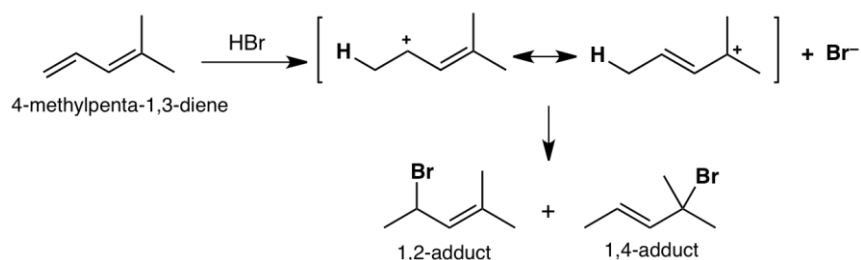
15.11



15.12



15.13



The 1,2-adduct has a double bond with three alkyl substituents, while the 1,4-adduct is a disubstituted alkene. The 1,2-adduct is more stable than the 1,4-adduct in this reaction.

15.14

