

Answers to Problem 57, Chemistry 301X - 2006

Sodium hydride will remove the OH proton to give a pair of stereoisomeric alkoxides. One of these can undergo an intramolecular  $S_N2$  reaction to give  $C_5H_8O$ , but the other cannot, as in only one stereoisomer is the nucleophile positioned properly to do the displacement from the rear of the departing bond. There are NO frontside  $S_N2$  reactions known.

two compounds

