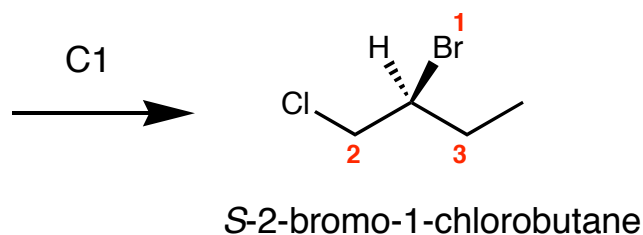
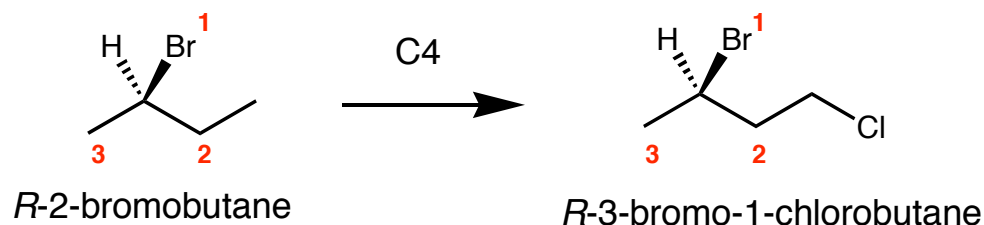


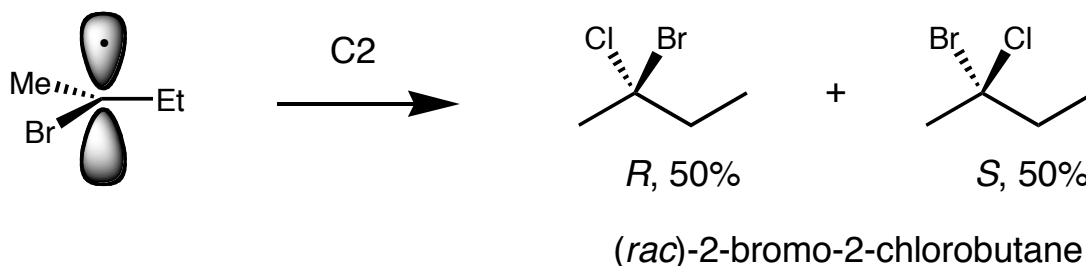
# Stereochemistry of Chlorination

monochlorination products from Cl<sub>2</sub>/heat



In reactions occurring away from the stereocenter

- the **relative configuration** of the center is retained
- the CIP priority may be different or the same

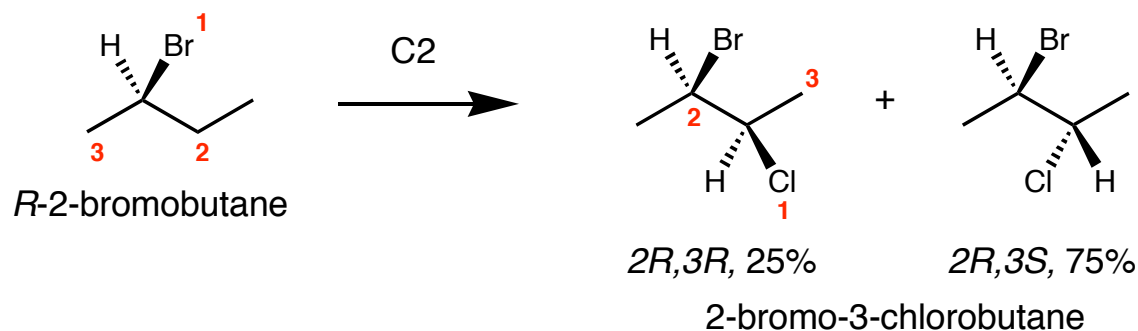


reaction at the stereocenter provides an **achiral** intermediate

- enantiomeric prods form from enantiomeric TSs
- reaction on either side is equal in energy
- a racemate results

# Stereochemistry of Chlorination

monochlorination products from  $\text{Cl}_2/\text{heat}$



diastereomeric products arise from diastereomeric TSs

- diastereomers are different in energy
- TSs leading to diastereomers may be different in energy

This is a **stereoselective reaction**

- one stereoisomer is produced in excess over another
- in this reaction, the stereoselectivity is low,  $\Delta\Delta G^\ddagger < 0.5$  kcal/mol

