ORGANIC CHEMISTRY 2 LECTURE GUIDE 2019

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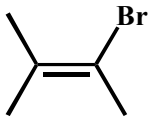
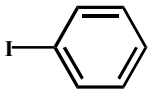
Lesson V.3. Reaction of Organometallics with RX and Epoxides

Gilman reagents in substitution reactions

Because the substitution induced by a Gilman reagent is not a simple S_N2 reaction, it works on both sp^3- and sp^2-hybridized carbons as well (recall that S_N2 only works on sp^3-hybridized C):

Me_2CuLi + 

A

Me_2CuLi + 

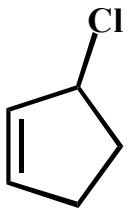
B

Notes

Lesson V.3. Reaction of Organometallics/MH with RX and Epoxides

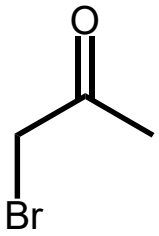
Gilman reagents in substitution reactions

Me_2CuLi +



A

Me_2CuLi +



B

Notes

Lesson V.3. Reaction of Organometallics/MH with RX and Epoxides

Ring-opening of epoxides

Epoxides can be used as starting materials to add additional carbon atoms if a carbanion source like RMgX or RLi is used:

Organometallics are strong bases, so:

Notes