

ORGANIC CHEMISTRY 1 LECTURE GUIDE 2019

BY RHETT C. SMITH

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Instructors: Free PowerPoint lecture slides to accompany this text can be obtained by emailing IQ@protonguru.com from your accredited institution email account. The homepage at protonguru.com provides a link to citations to popular text books for further reading on each Lesson topic in this primer.

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Organic Chemistry 1 Lecture Guide 2019

By Rhett C. Smith, Ph.D.

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Companion Books from the Proton Guru:

Organic Chemistry 1 Reactions and Practice Problems 2019

by Rhett C. Smith

Organic Chemistry 1 Primer 2019,

by Rhett C. Smith, Andrew G. Tennyson, and Tania Houjeiry

General Reaction:

Considerations:

- Which things add to the C=C?
- If the two sides are different, which adds to which C?
- Is there a carbocation that could rearrange (like for E1 and S_N1)?

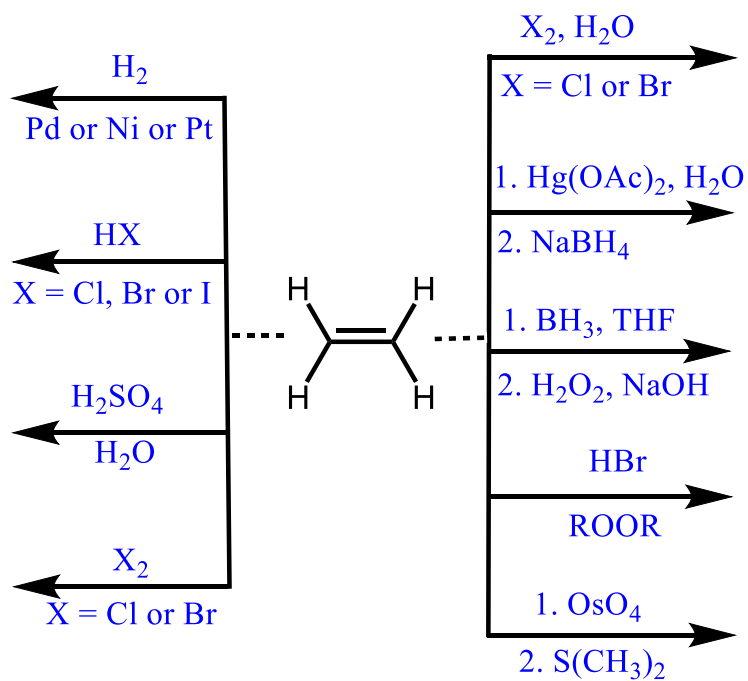
Notes

More Complex Considerations:

- Do the two things I add end up *anti*- or *syn*- to each other?
- What if there are stereocenters or I make stereocenters?
- What are the mechanisms?

Notes

What Adds?



Notes

Strong Acids (HX or H_2SO_4):

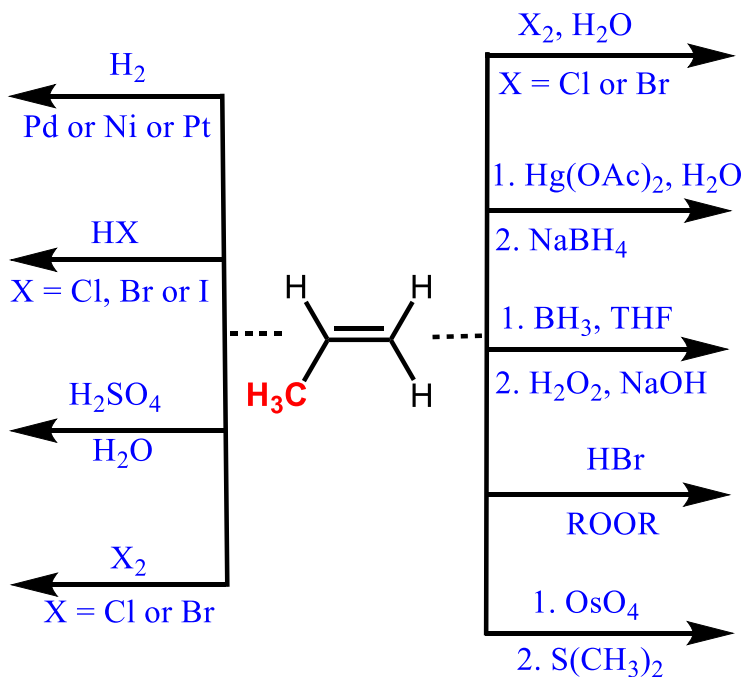
Water or NaOH or OsO_4 :

X_2 :

HX :

BH_3 or NaBH_4 :

Which side gets the more electronegative atom bound to it?



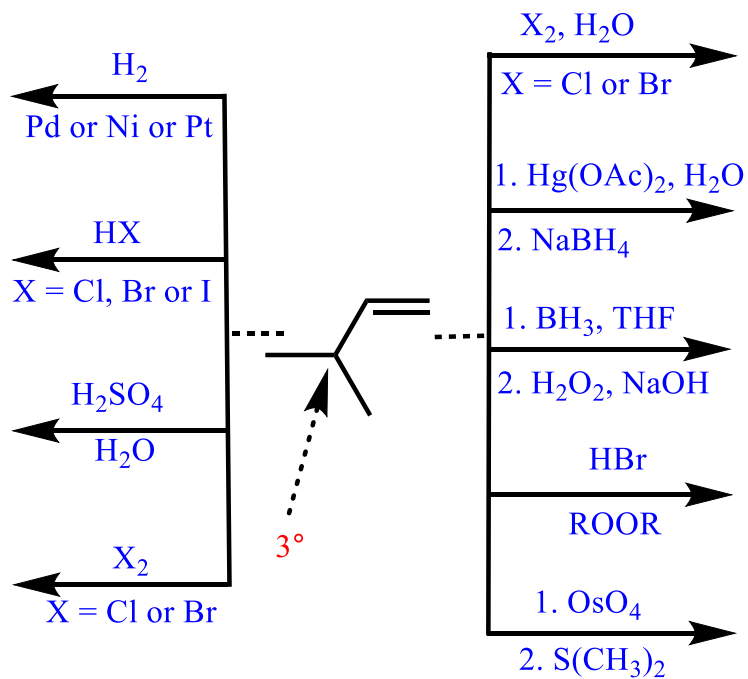
Notes

More E.N. adds to more subst:

More E.N adds to less subst:

Peroxides such as ROOR or H_2O_2 (HOOH, hydrogen peroxide):

Is there a carbocation that can rearrange?



Notes

Strong acids without added peroxides: