ORGANIC CHEMISTRY 1 LECTURE GUIDE 2019

BY RHETT C. SMITH

Marketed by Proton Guru

Find additional online resources and guides at protonguru.com

Try out *Organic Chemistry 1 Primer*
and
*Organic Chemistry 1 Reaction and Practice Problem Book*

For concise, plain-language, study-on-your own organic help and practice

There is a lot of online video content to accompany this book at the Proton Guru YouTube Channel! Just go to YouTube and search "Proton Guru Channel" to easily find our content.

**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.



Executive Editor: Rhett C. Smith, Ph.D. You can reach him through our office at: IQ@protonguru.com



Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

ISBN 978-1074137434

# Organic Chemistry 1
# Lecture Guide 2019

## By Rhett C. Smith, Ph.D.



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


acetylene terminal alkyne internal alkyne

A

Alkanes: **saturated** hydrocarbons

Alkenes: **unsaturated** hydrocarbons (double bond in an alkane)

Alkynes: **unsaturated** hydrocarbons (triple bond in an alkane)

Nomenclature of alkynes is much like that for alkanes, with modifications:

1. always designate the longest chain having

   B

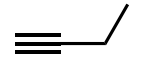
2. Number the parent chain such that

   C

3. change the 'ane' ending of the name you would use if it were an alkane into an 'yne' ending to indicate that it has a triple bond in it.

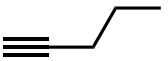
*Notes*

propyne



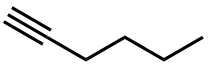
A

B

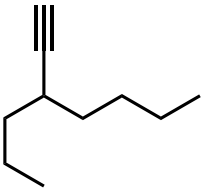


1-pentyne

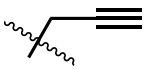
2-pentyne



1-hexyne



C

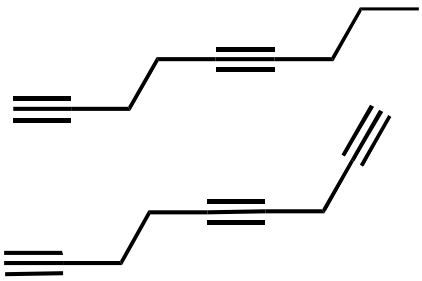


propargyl group

NOTE: Because it is linear there are no E or Z isomers

*Notes*

4. If there is more than one triple bond, use a "-diyne", "-triyne", etc. at the end of the name in place of the "yne", with multiple numbers indicating where the triple bonds are (just like for alkenes):



A

B

5. If alcohol functionalities are present in addition to alkyne:

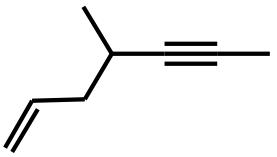
C

if both alkyne and alkene units are present, number the parent so that

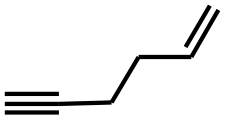
D

IF AND ONLY IF there is a tie between the two in term of numbering the parent, alkene > alkyne (the **lowest** number is given to the one that comes **first** alphabetically).

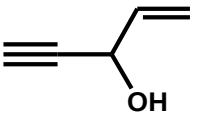
*Notes*



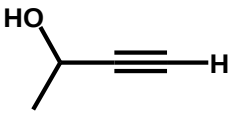
A



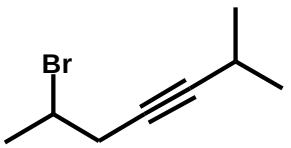
B




C




D




E

Note the order of the endings in example C: en-yn-ol

*Notes*