

UNIT 4 – NOMENCLATURE

VTOC: [Alkanes](#) [Cycloalkanes](#)

UCSD: [1.4: Functional groups and organic nomenclature](#)

Skills:

4A. Determine if alkane carbons are 1°, 2°, 3° or 4°

4B. Name alkanes, cycloalkanes and alkyl halides (chain names up to decane and isopropyl, isobutyl, sec-butyl and tert-butyl groups must be memorized)

Molecule		Substituent			
<u>m</u> ethane	CH ₄	methyl	-CH ₃		
<u>e</u> thane	C ₂ H ₆	ethyl	-CH ₂ CH ₃		
<u>p</u> ropane	C ₃ H ₈	propyl	-CH ₂ CH ₂ CH ₃	<u>i</u> sopropyl	$\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH} \\ \\ \text{CH}_3 \end{array}$
<u>b</u> utane	C ₄ H ₁₀	butyl	-CH ₂ CH ₂ CH ₂ CH ₃	<u>i</u> sobutyl	$\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH}_2-\text{CH} \\ \\ \text{CH}_3 \end{array}$
		<i>sec</i> - <u>b</u> utyl (<i>s</i> - <u>b</u> utyl)	$\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH} \\ \\ \text{CH}_2\text{CH}_3 \end{array}$	<i>tert</i> - <u>b</u> utyl (<i>t</i> - <u>b</u> utyl)	$\begin{array}{c} \text{CH}_3 \\ \\ -\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$
<u>p</u> entane	C ₅ H ₁₂	pentyl	-(CH ₂) ₄ CH ₃		
<u>h</u> exane	C ₆ H ₁₄	hexyl	-(CH ₂) ₅ CH ₃		
<u>h</u> eptane	C ₇ H ₁₆	heptyl	-(CH ₂) ₆ CH ₃		
<u>o</u> ctane	C ₈ H ₁₈	octyl	-(CH ₂) ₇ CH ₃		
<u>n</u> onane	C ₉ H ₂₀	nonyl	-(CH ₂) ₈ CH ₃		
<u>d</u> ecane	C ₁₀ H ₂₂	decyl	-(CH ₂) ₉ CH ₃		
<u>More substituents:</u>		fluoro: -F	chloro: -Cl	bromo: -Br	iodo: -I