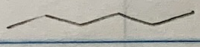
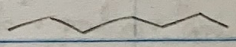
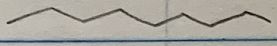
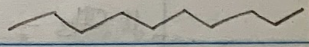
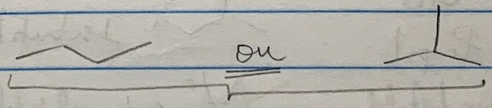
QOB → Módulo 4 : Nomenclatura e funções orgânicas
↳ Bruice: 3.1 a 3.6

⟹ Nomenclatura de alcanos (C_nH_{2n+2}) : base para as outras nomenclaturas ↳ hidrocarbonetos

Para alcanos de cadeia reta : prefixo + "ano"

Carbonos	Nome	Fórmula	Estrutura
1	Metano	CH_4	CH_4
2	Etano	C_2H_6	H_3C-CH_3
3	Propano	C_3H_8	
4	Butano	C_4H_{10}	 *
5	Pentano	C_5H_{12}	
6	Hexano	C_6H_{14}	
7	Heptano	C_7H_{16}	
8	Octano	C_8H_{18}	
9	Nonano	C_9H_{20}	
10	Decano	$C_{10}H_{22}$	

Para o butano:  ou (isobutano)
↳ Nomenclatura comum

Isômeros constitucionais!

. Quanto mais carbonos, mais isômeros constitucionais
↳ Nomenclatura sistemática (IUPAC)
Cadeia parental + substituintes (?)

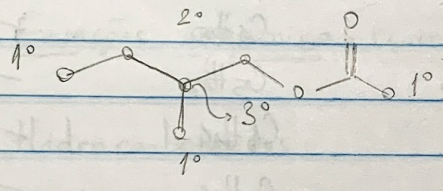
⟹ Nomenclatura de substituintes

Alcano − H ⟶ Substituinte alquil (R)
(~~prefixo~~ + "ano") (prefixo + "il")

ex.: $CH_4 - H \longrightarrow CH_3 -$ $\quad\quad$ $H_3C-CH_3 - H \longrightarrow H_3C-CH_2-$
(metano) (metil) (etano) (etil)

- Quando H é trocado por:
  - OH: álcool ⟶ CH_3OH (metanol)
  - NH_2: amina ⟶ CH_3NH_2 (metanamina)
  - X: cloreto de alquila ⟶ CH_3X (halometano)
    (X = F, Cl, Br, I)
  - OR: éter ⟶ CH_3OR (alcoximetano)

OBS.: Tipos de carbono:



1°: ligado a 1 carbono
2°: " " 2 carbonos
3°: " " 3 carbonos

Substituintes comuns:

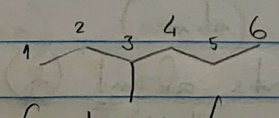
CH_3- Metil
CH_3CH_2- Etil
Propil
Isopropil
Butil
Isobutil
terc-butil
Secbutil

Muitas nomenclaturas comuns!

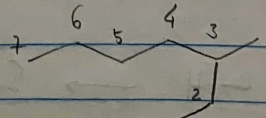
⟹ Regras de nomenclatura:

a. Determinar a cadeia carbônica mais longa: cadeia parental (nome base; último nome)

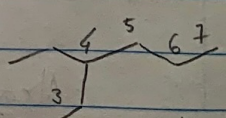
ex.:



6: hexano (nome base)



7: heptano (nome base)

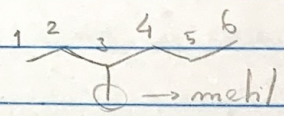


7: heptano (nome base)

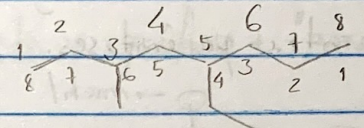
b. Número - substituinte no início do nome

* Enumeração: menor valor possível
* Mais de um subs.: menor dos números possíveis
* Mais de um subs. igual: "di", "tri", "tetra" e ordem alfabética no nome

ex.:

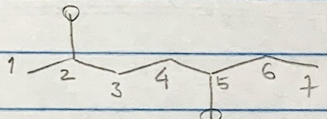


3-metil-hexano
(3-metilexano)

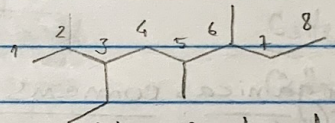


5-etil-3-metiloctano

3-metil x 4-etil
5-etil 6-metil



2,5-dimetilheptano



3-etil-5,6-dimetiloctano

di, tri e tetra não contam para ordem alfabética

⟹ Para cicloalcanos (alcanos cíclicos): "ciclo" + prefixo + "ano"



ciclopropano
(C_3H_6)



ciclobutano
(C_4H_8)



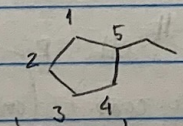
ciclopentano
(C_5H_{10})



ciclohexano
(C_6H_{12})

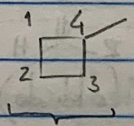
⟶ C_nH_{2n} (IDH = 1!)

ex.:



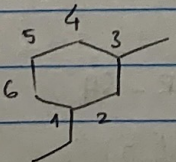
Etilciclo-pentano

parental



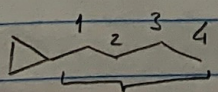
Metilciclo-butano

parental



⇝ 1-etil-3-metilciclohexano ✓
3-etil-1-metilciclohexano ✗

2 ou mais subs.: enumeração

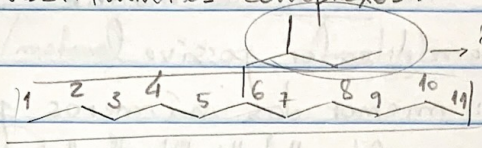


1-ciclopropil butano

parental

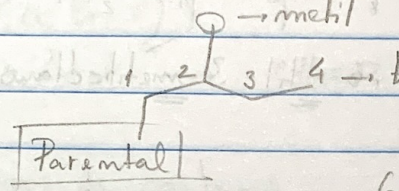
⇒ Substituintes complexos:

ex.:



→ undecano

a. Numeração a partir da cadeia parentral;
b. Posição do "substituinte";
c. Nome entre parênteses.

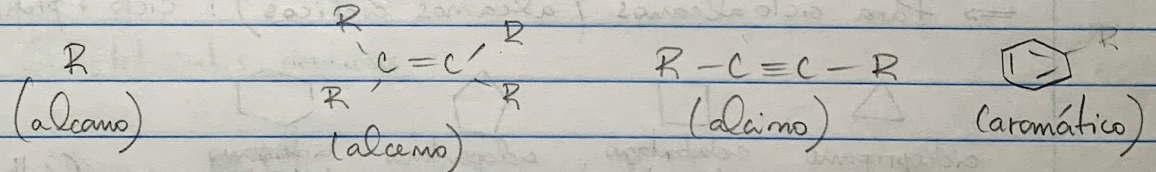


(2-metilbutil) na posição 6 da principal

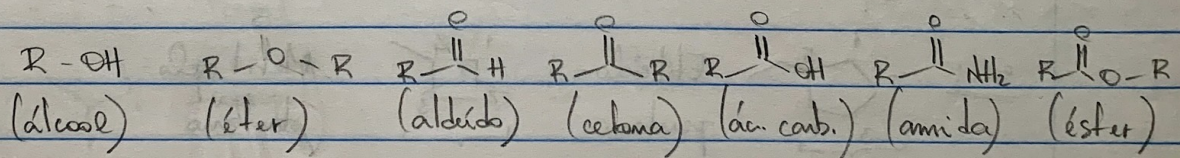
~ 6-(2-metilbutil) undecano

⇒ Funções orgânicas comuns:

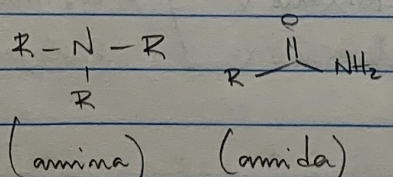
a. Hidrocarbonetos:



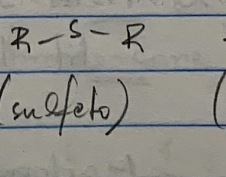
b. Oxigenados:



c. Nitrogenados:



d. Sulfurados:



e. Haletos de alquila

