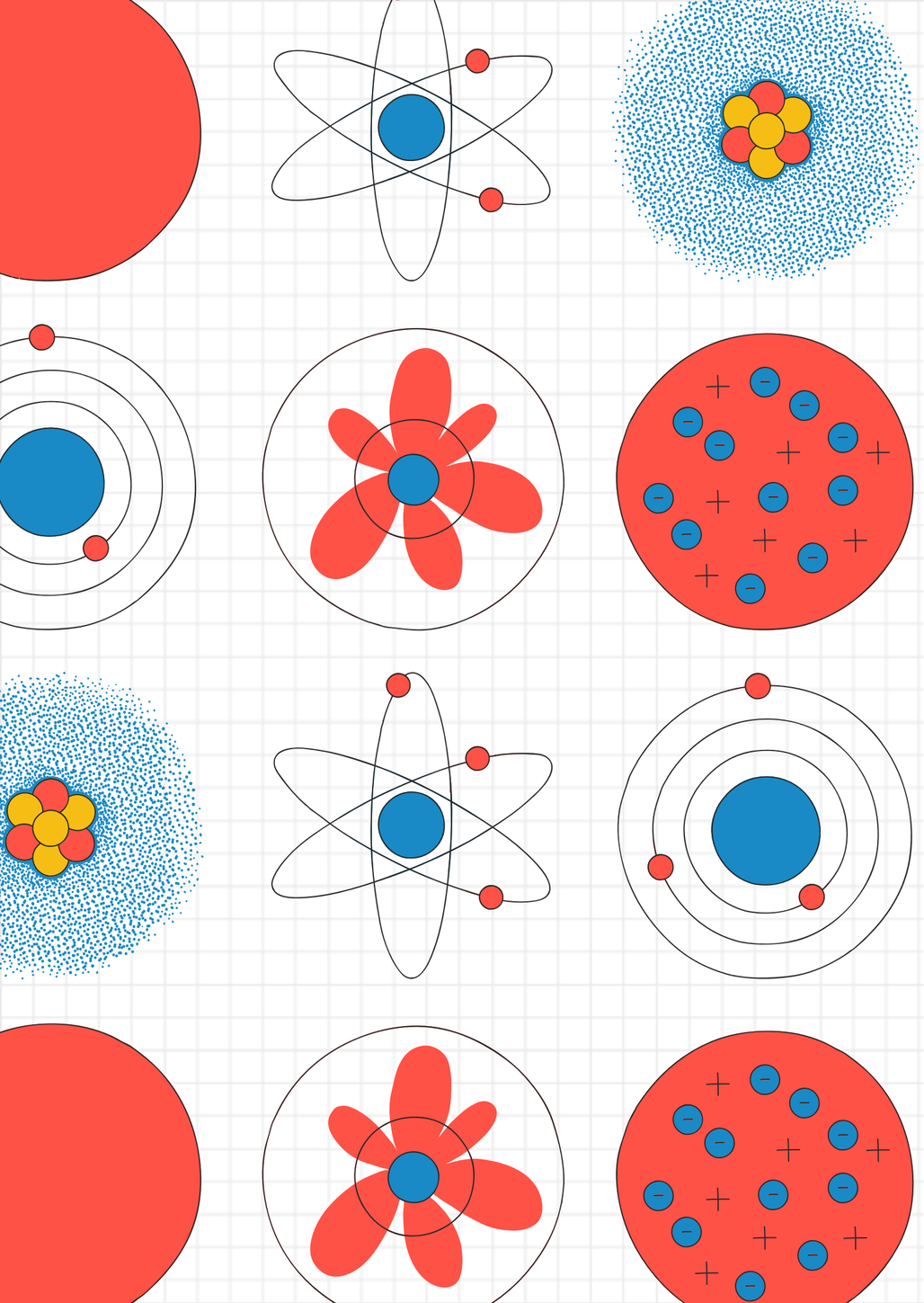
Nomenclatura de Compostos Orgânicos

Prof. Pedro

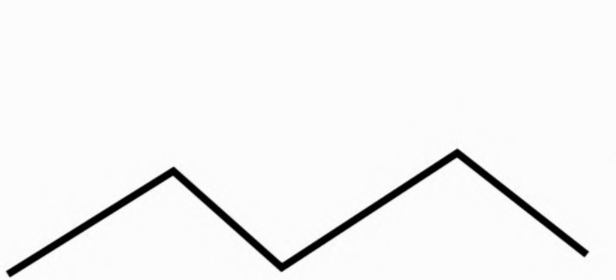


Na aula de Hoje

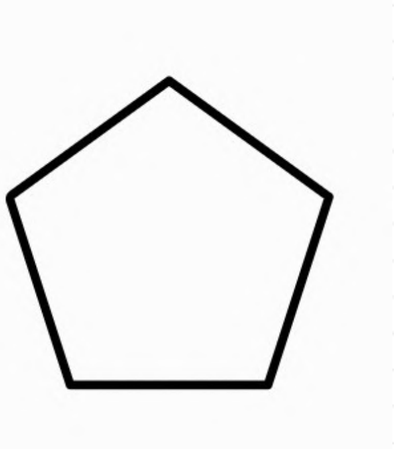
- Revisão
- Como surgiu a nomenclatura
- Regras para a nomenclatura
- Exercícios

Revisão

Cadeia Aberta

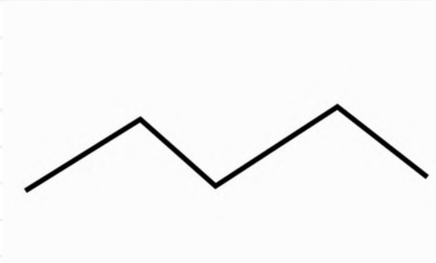


Cadeia Fechada

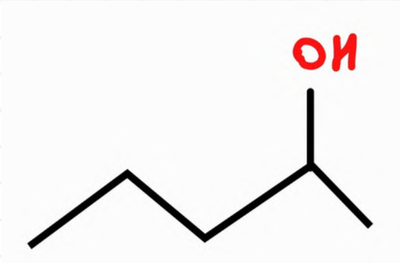


Revisão

Grupos Funcionais



HIDROCARBONETOS



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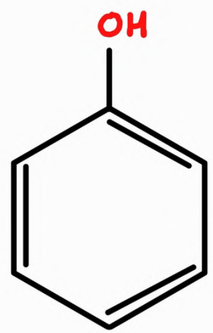
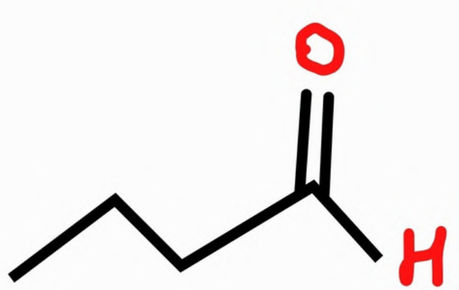
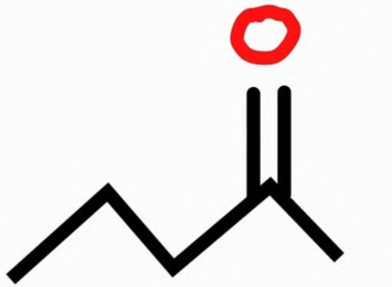


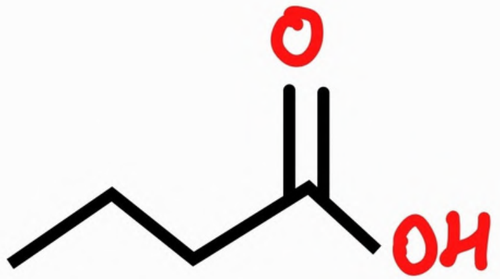
FENOL



ALDEÍDO



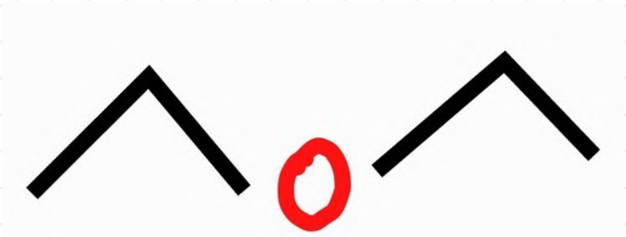
CETONA



ÁCIDO CARBOXILÍCO

Revisão

Grupos Funcionais



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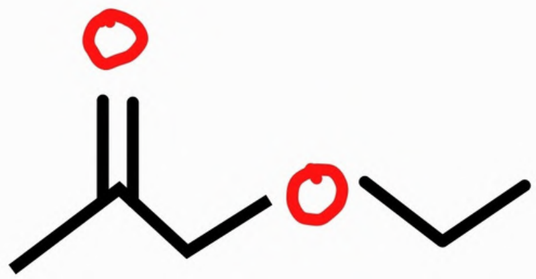
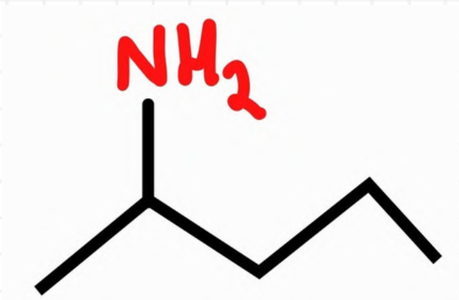
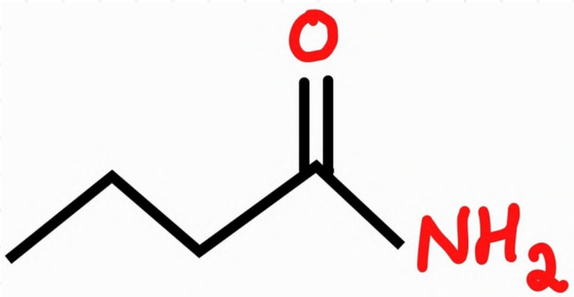


ÉSTER



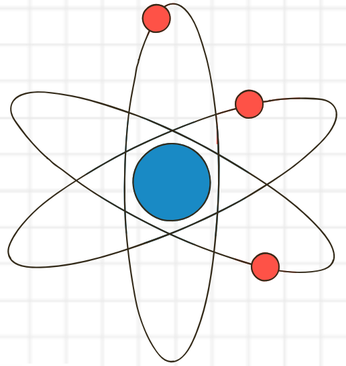
AMINA

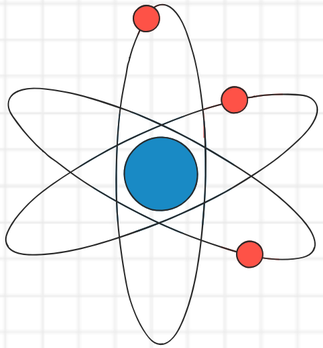


AMIDA

Como surgiu a Nomenclatura?

Estabelece regras para nomear e identificar os compostos orgânicos

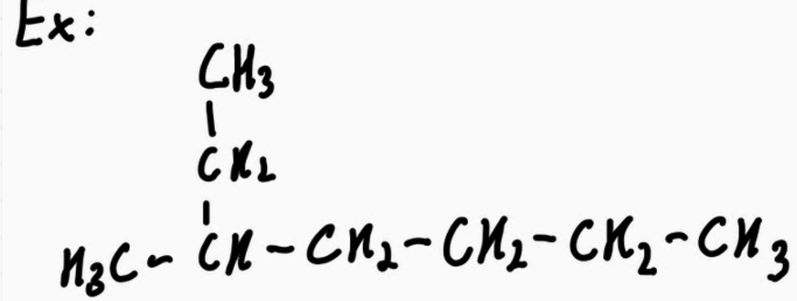


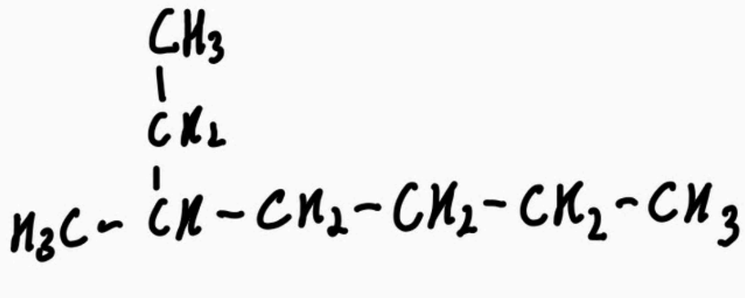


Regras para a Nomenclatura

1º Identificação da Cadeia Principal

Ex:

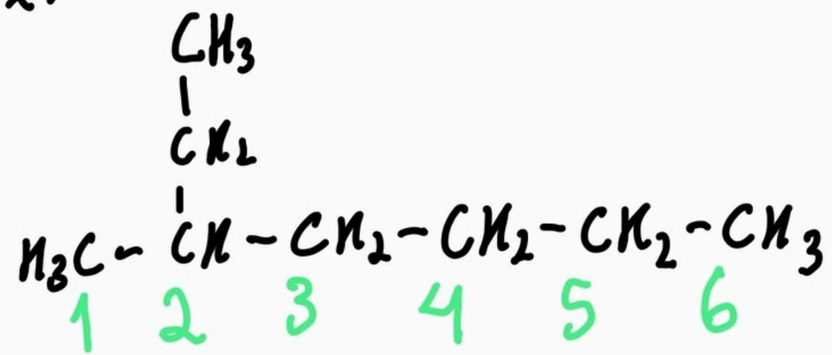


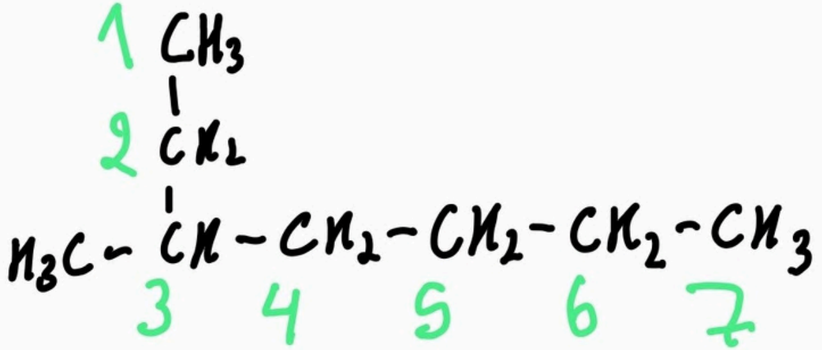


Regras para a Nomenclatura

1º Identificação da Cadeia Principal

Ex:



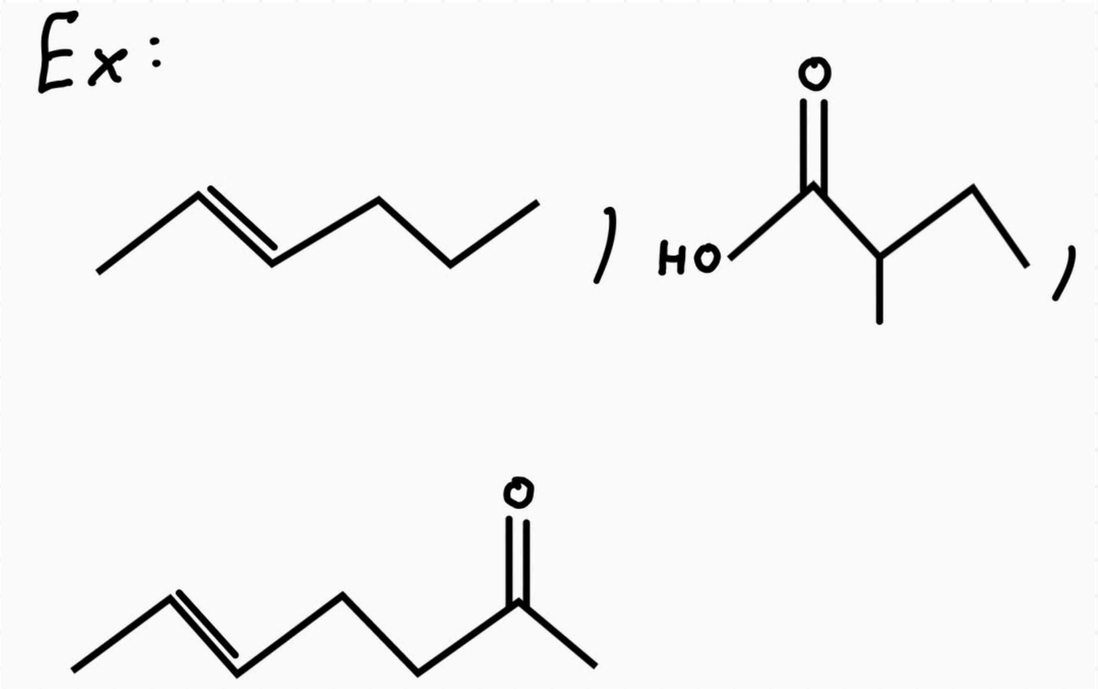


Regras para a Nomenclatura

1º Identificação da Cadeia Principal

2º Numerar os Carbonos

Grupo Funcional> Insaturações> Ramificações

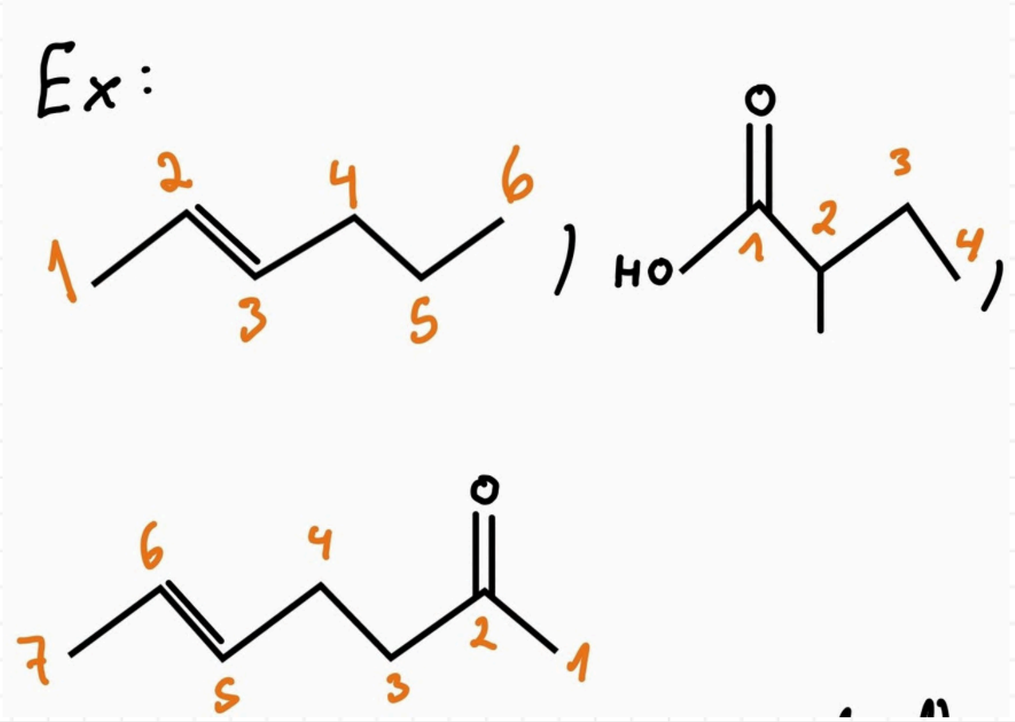


Regras para a Nomenclatura

1º Identificação da Cadeia Principal

2º Numerar os Carbonos

Grupo Funcional> Insaturações> Ramificações



Regras para a Nomenclatura

1º Identificação da Cadeia Principal

2º Numerar os Carbonos

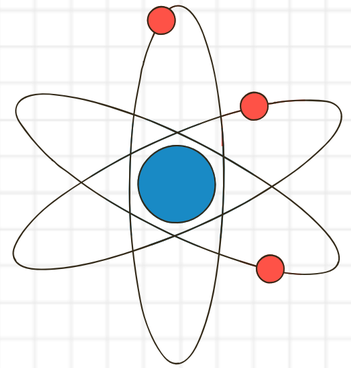
3º Identificar, numear e nomear os substituintes (Radicais)

CH_3- = Metil

CH_2-CH_3- = Etil

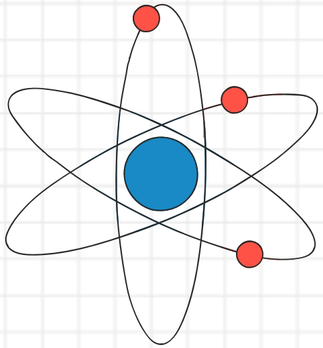
Estrutura da Nomenclatura

Ramificações + Cadeia Principal



Ordem Alfabética

Prefixo + Sufixo + Infixo



NOMENCLATURA

Ramificação

METIL
ETIL
(EM ORDEM ALFABETICA)

Prefixo

1C- MET
2C- ET
3C- PROP
4C- BUT
5C- PENT
6C- HEX
7C- HEPT
8C- OCT
9C- NON
10C- DEC
.....

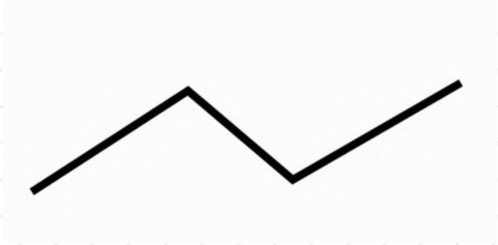
Sufixo

Lig. Simples- AN
Lig. Dupla- EN
Lig. Tripla- IN
Duas duplas- DIEN

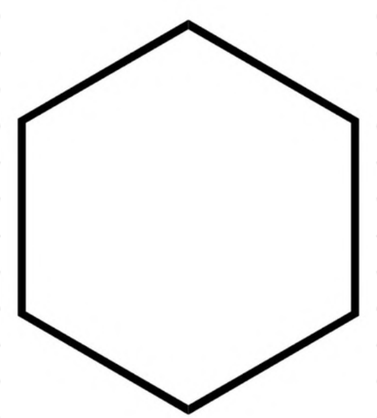
Infixo

HIDROCARBONETO- O
ÁLCOOL- OL
FENOL- FENOL
ALDEÍDO- AL
CETONA- ONA
ÁCIDO CARBOXÍLICO- OICO
ÉTER- ÓXI + ANO
ÉSTER- OATO + ILA
AMINA- AMINA
AMIDA- AMIDA

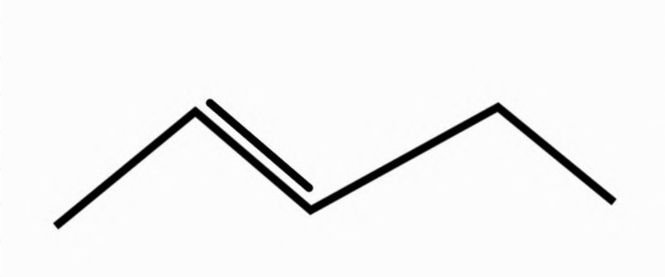
Hidrocarbonetos



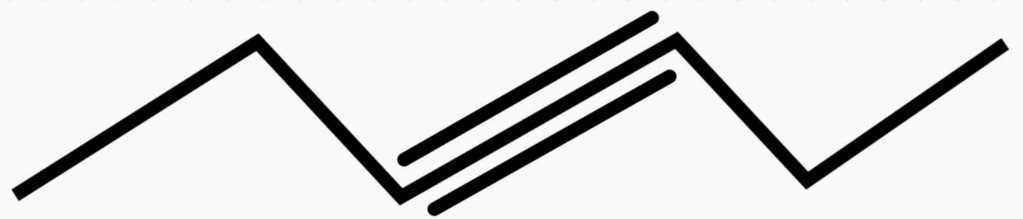
BUTANO



Ciclo Hexano

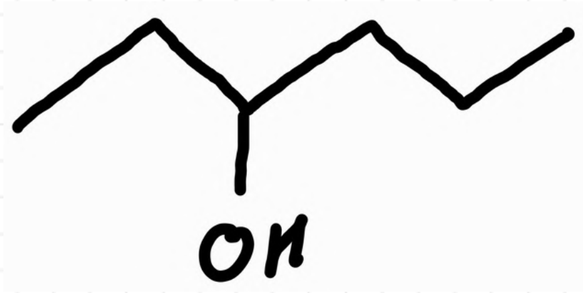


PENT-2-ENO

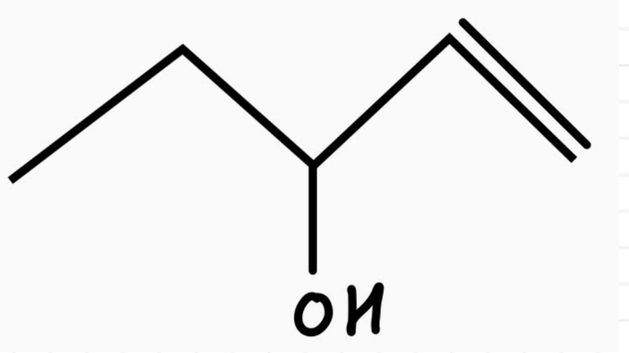


HEX-3-INO

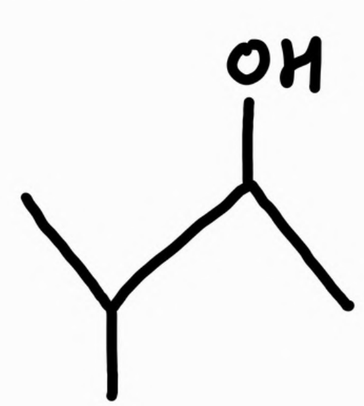
Álcool



HEXAN-3-OL

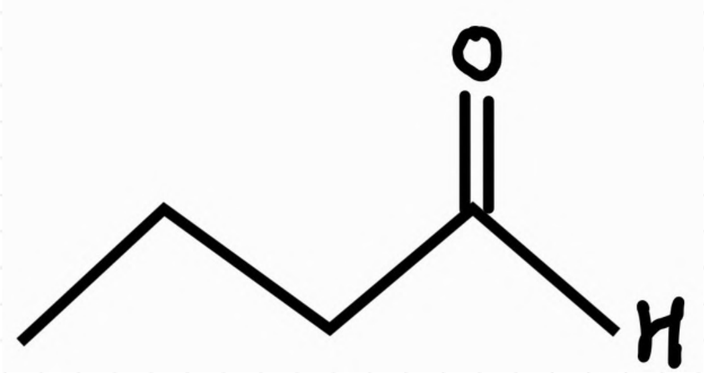


PENT-4-EN-3-OL

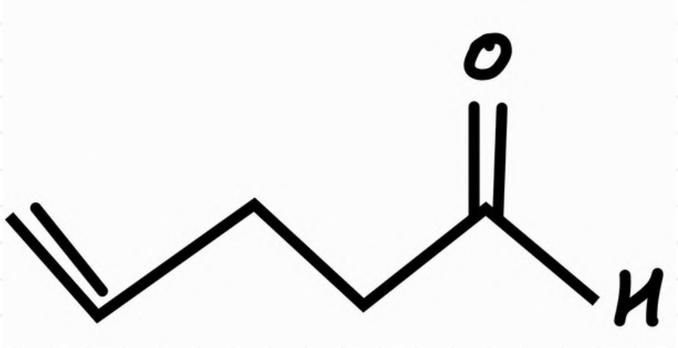


4-METIL-BUTAN-2-OL

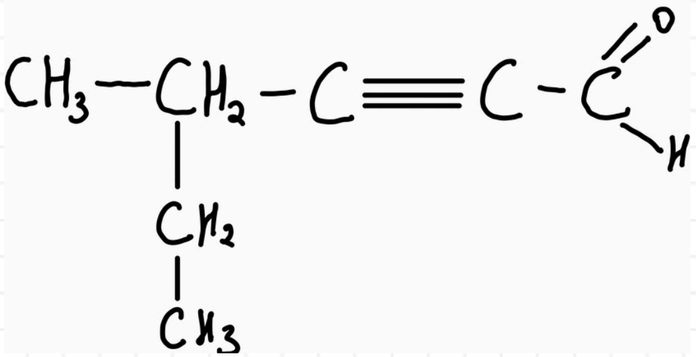
Aldeído



BUTANAL

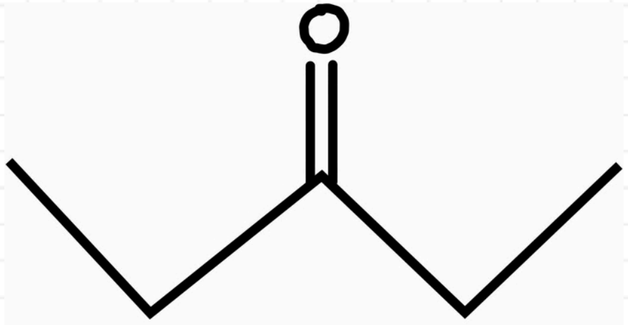


PENT-4-ENAL

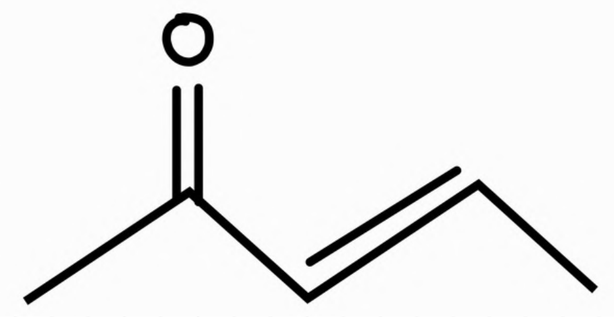


4-METIL-HEX-2-INAL

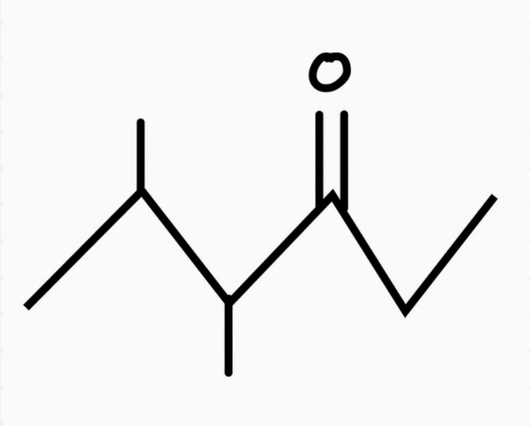
Cetona



PENTAN-3-ONA

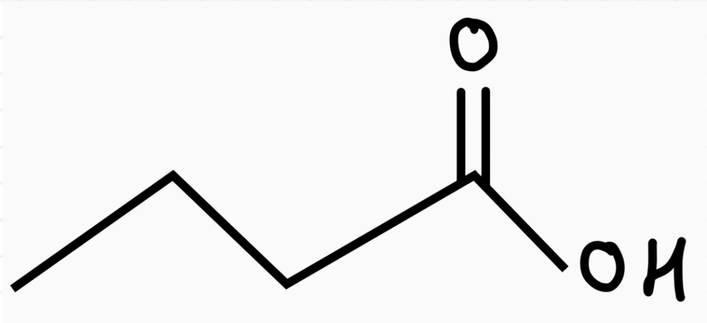


PENT-3-EN-2-ONA

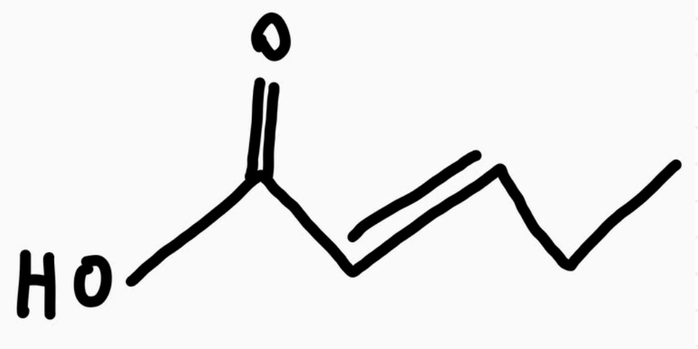


3,4-METIL-HEXAN-3-ONA

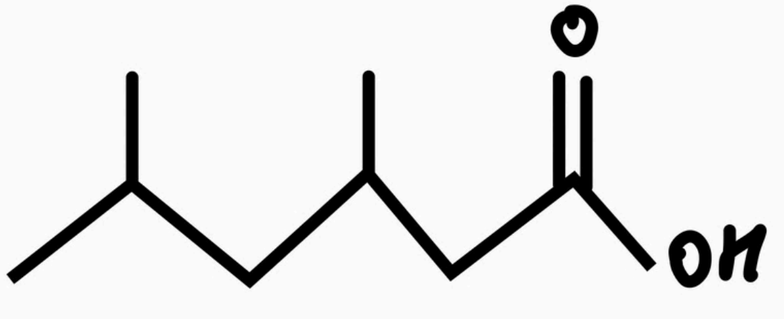
Ácido Carboxílico



ÁCIDO BUTANOICO



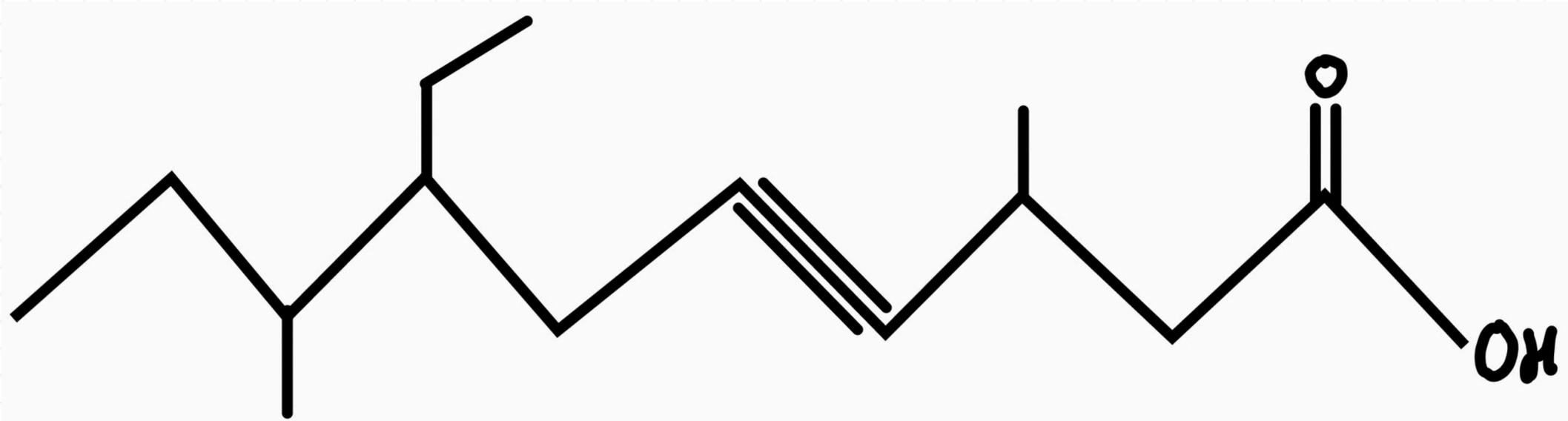
ÁCIDO PENT-3-ENOICO



ÁCIDO 3,5-DIMETIL-HEXANOICO

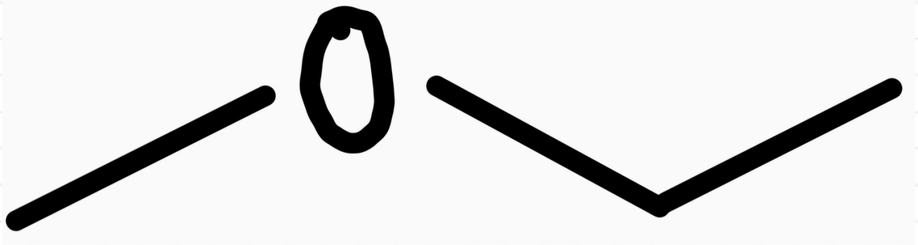
Ácido Carboxílico

DESAFIO!!!!

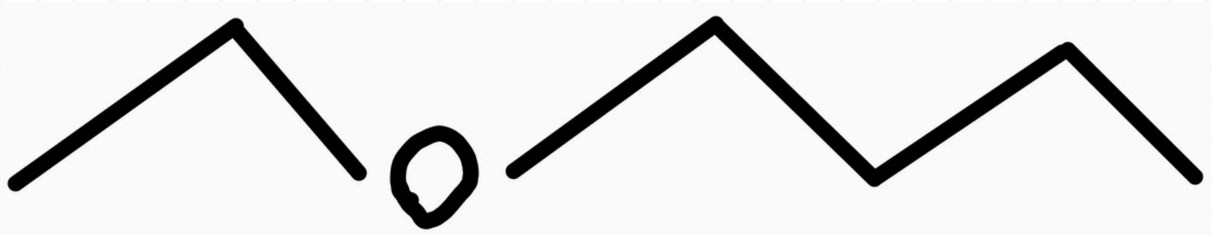


ÁCIDO 7-ETIL-3,8-DIMETIL-DEC-4-INOICO

Éter

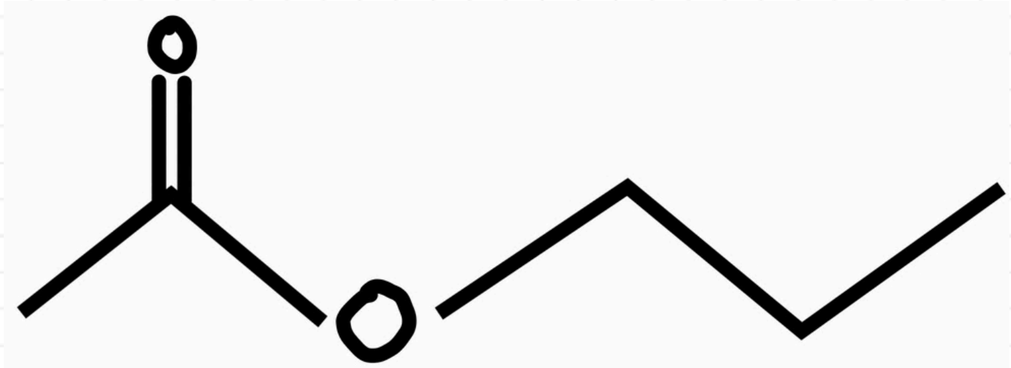


METOXIETANO

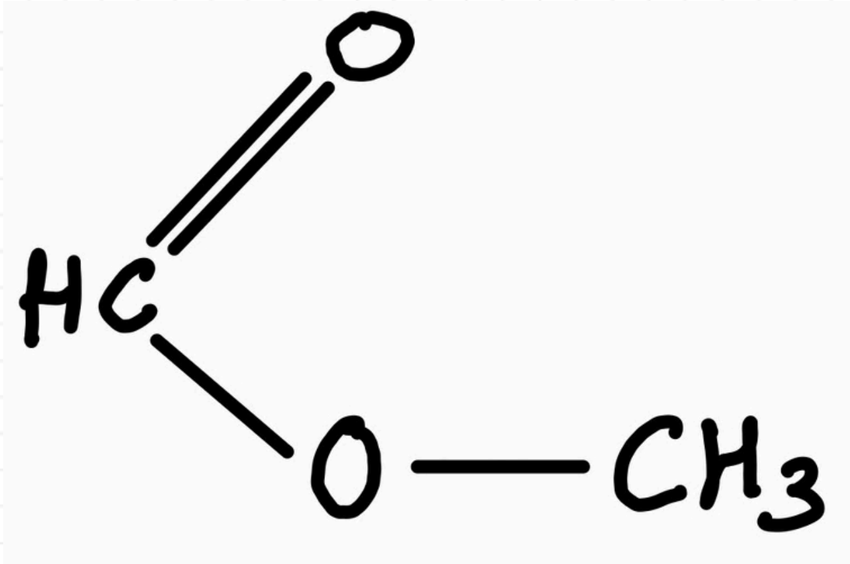


ETOXIBUTANO

Éster

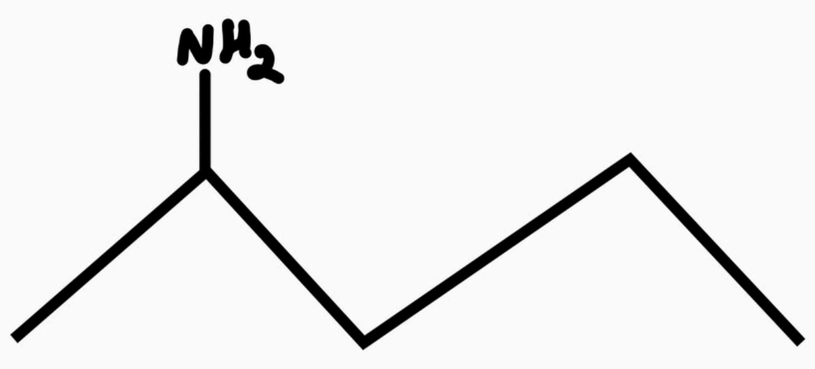


PROPANOATO DE ETILA

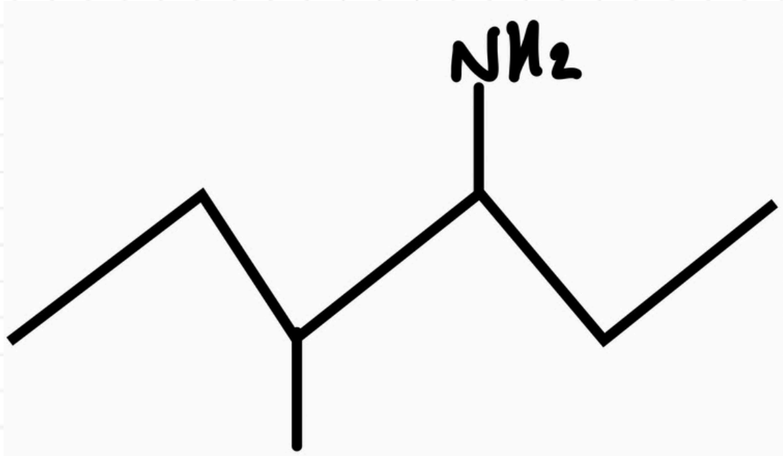


METANOATO DE METILA

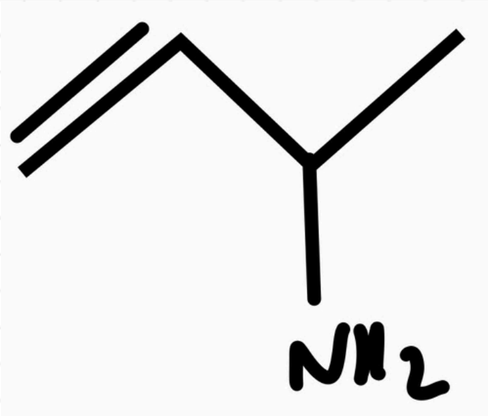
Amina



PENTAN-2-AMINA

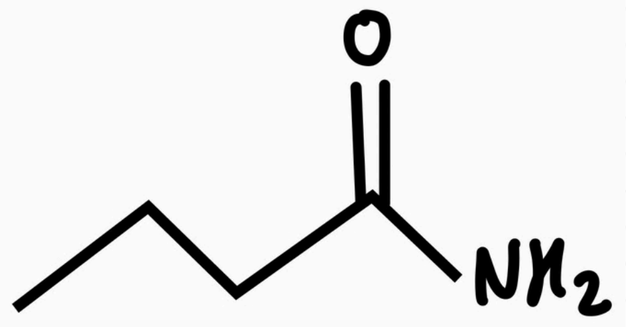


4-METIL-HEXAN-3-AMINA

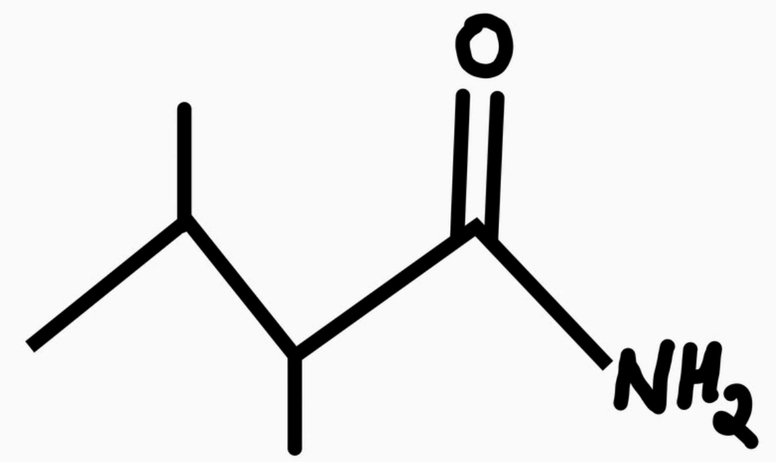


BUT-3-EN-2-AMINA

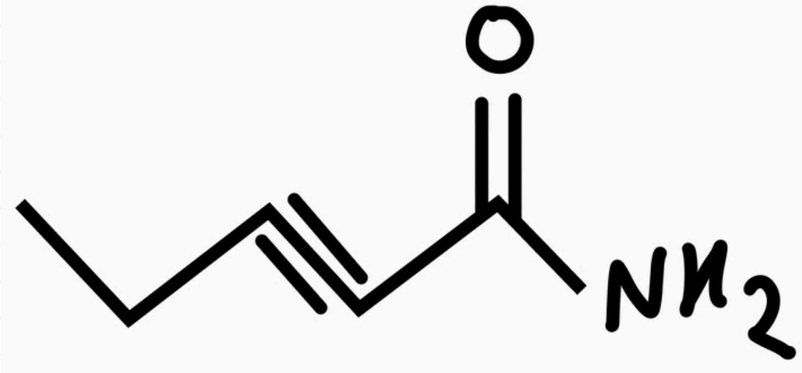
Amida



BUTANAMIDA



2,3-DIMETIL-BUTANAMIDA



PENT-2-INAMIDA

Exercícios

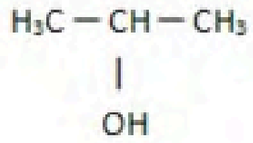
Na Química orgânica, os compostos são reconhecidos pelas cadeias formadas por carbono e hidrogênio. Entretanto, outros elementos podem fazer parte da estrutura química desses compostos, como o oxigênio.

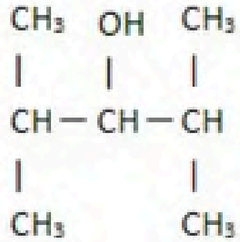
Selecione a alternativa em que os dois compostos orgânicos apresentam funções orgânicas oxigenadas.

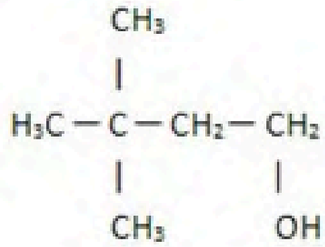
a) clorofórmio e metanoato de etila
b) propanol e ácido propanoico
c) eteno e etanodiol
d) etanamida e benzeno

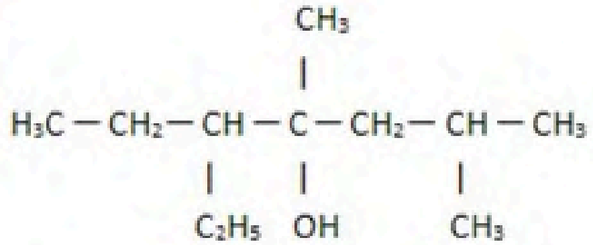
Exercícios

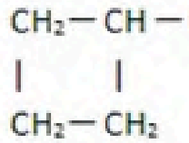
Dê os nomes, segundo as regras estabelecidas pela IUPAC (União Internacional de Química Pura e Aplicada), dos seguintes compostos:

a) 

b) 

c) 

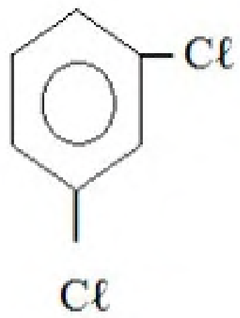
d) 

e) 

Exercícios

(ENCE-UERJ-Cefet) Observe as fórmulas estruturais a seguir:

I.



II. $CH_3 - COOH$

III. $H_3C - CH_2 - \underset{\displaystyle H}{\underset{|}{N}} - CH_2 - CH_3$

IV. $H_2C = CH - CH_2 - CH_3$

V. $H_2C = CH - COOCH_2 - CH_3$

Segundo a ordem em que aparecem, sua nomenclatura oficial é:

a) 1,3-diclorobenzeno, ácido etanoico, dietilamida, 1-buteno e propanoato de etila.

b) ácido etanoico, 1,3-diclorobenzeno, dietilamina, 3-buteno e propenoato de etila.

c) 2,4-diclorobenzeno, ácido etanoico, dietilamida, 2-buteno e etanoato de propenila.

d) 1,3-diclorobenzeno, ácido etanoico, dietilamina, 1-buteno e propenoato de etila.

e) 2,4-diclorobenzeno, ácido etanoico, dietilamina, 2-buteno e propanoato de etila.

Muito Obrigado