

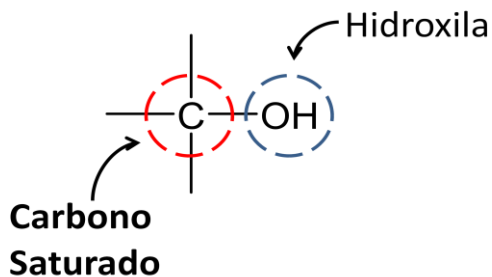


Lista de Exercícios

Nomenclatura Orgânica: Alcoóis

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1. Introdução



Alcoóis são compostos orgânicos que apresentam o grupo funcional hidroxila ($-OH$) ligado a um ou mais carbonos saturados.

A classificação dos alcoóis depende da posição da hidroxila:

- **Alcoóis primários** – apresentam sua hidroxila ligada a carbono na extremidade da cadeia.

- **Alcoóis secundários** – apresentam sua hidroxila unida a carbono secundário da cadeia.

- **Alcoóis terciários** – apresentam sua hidroxila ligada a carbono terciário.

Os alcoóis primários e saturados de cadeia normal com até onze carbonos são líquidos incolores, os demais são sólidos. Os alcoóis de até três carbonos possuem cheiro agradável e à medida que a cadeia carbônica aumenta, esses líquidos vão se tornando viscosos, de modo que acima de onze carbonos, eles se tornam sólidos inodoros, semelhantes à parafina.

2. Regras de nomenclatura

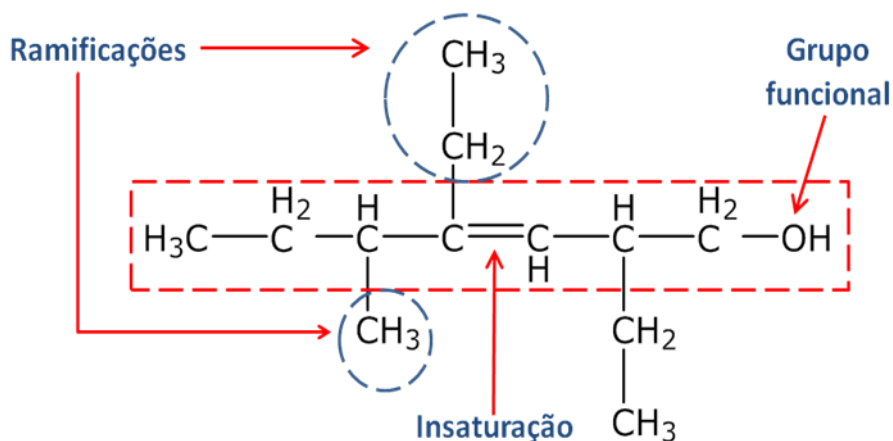
A **IUPAC** (International Union of Pure and Applied Chemistry) considera como a nomenclatura oficial dos compostos orgânicos a seguinte estrutura:

PREFIXO	+	INFIXO	+	SUFIXO
Número de Átomos de Carbono		Tipo de Ligação entre Carbonos		Função Orgânica
1 = MET		AN		
2 = ET		SÓ LIGAÇÕES SIMPLES		
3 = PROP		EN		
4 = BUT		UMA LIGAÇÃO DUPLA		
5 = PENT		IN		OL
6 = HEX		UMA LIGAÇÃO TRIPLA		ÁLCOOL
7 = HEPT		DIEN		
8 = OCT		DUAS LIGAÇÕES DUPLAS		
9 = NON		TRIEEN		
10 = DEC		TRÊS LIGAÇÕES DUPLAS		

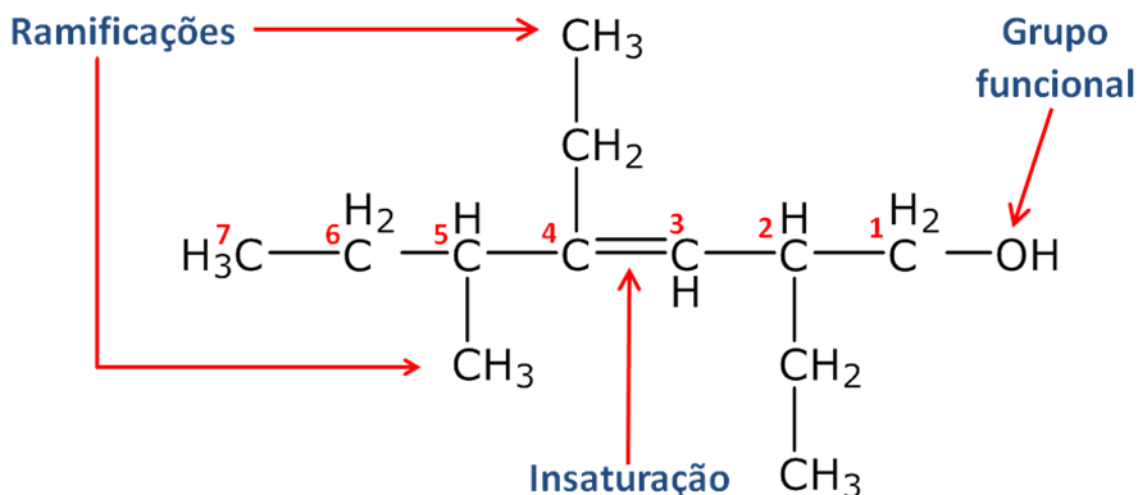
3. Numeração das cadeias

A cadeia principal para cadeias carbônicas abertas é aquela com maior número de átomos de carbonos que contenham:

- grupo funcional (procure átomos que não sejam carbono e hidrogênio);
- maior número de insaturações (ligações duplas ou triplas entre carbonos);
- maior número de grupos radicais substituintes.



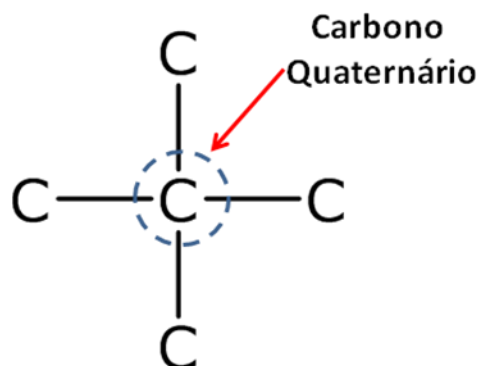
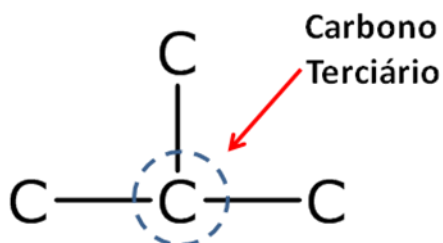
Começar a numerar a cadeia com os menores números possíveis a partir da extremidade de acordo com a preferência:



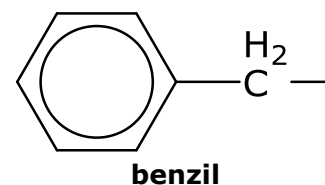
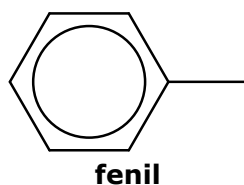
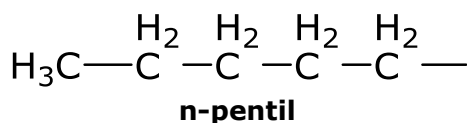
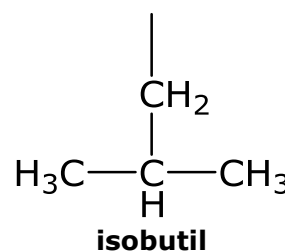
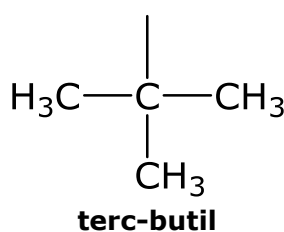
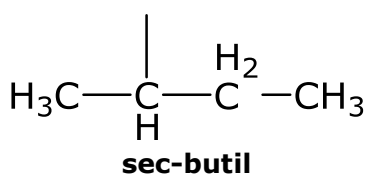
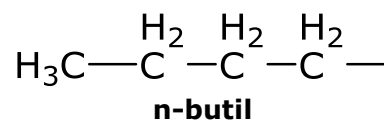
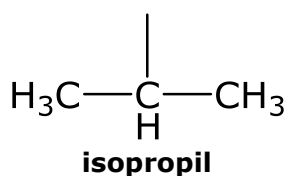
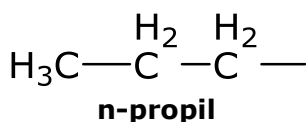
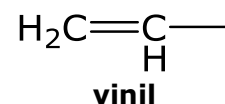
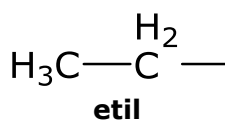
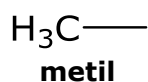
Quando houver só uma possibilidade, a numeração não precisa ser indicada.

4. Ramificações

Alcoóis ramificados apresentam pelo menos um carbono terciário ou quaternário. Não existem ramificações em carbonos secundários e primários.



4.a. Principais ramificações

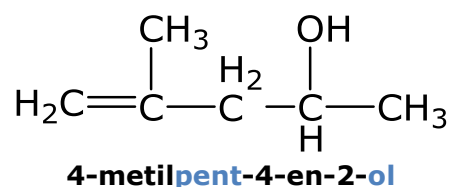
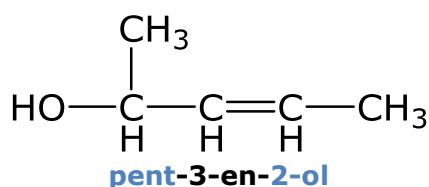
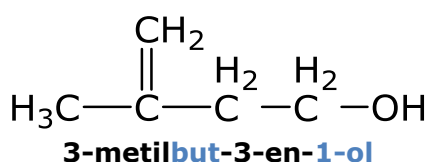
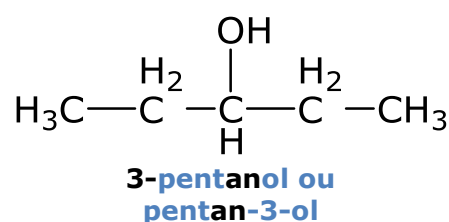
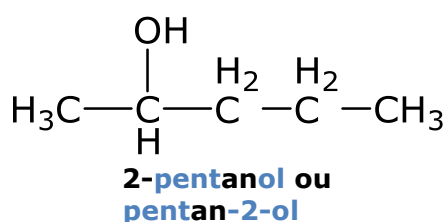
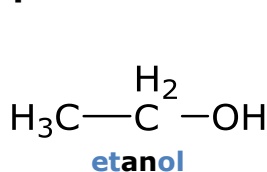


5. Regra de nomenclatura para alcoóis ramificados

RADICAL + PREFIXO + INFIXO + SUFIXO

Observação: radicais diferentes devem ser colocados em ordem alfabética

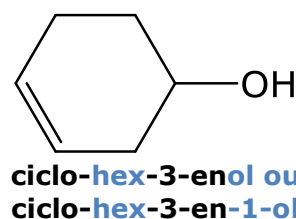
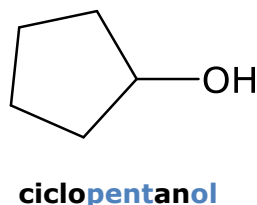
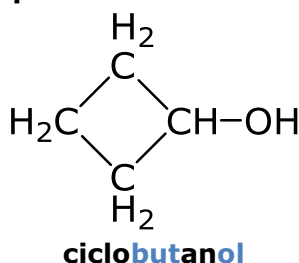
Exemplos:



6. Regra de nomenclatura de alcoóis cíclicos

CICLO + PREFIXO + INFIXO + SUFIXO

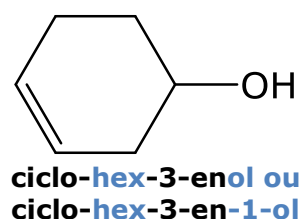
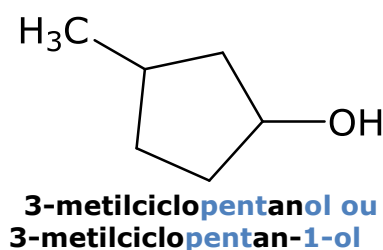
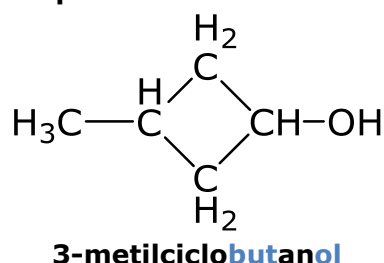
Exemplos:



7. Regra de nomenclatura de alcoóis cíclicos e ramificados

RADICAL + CICLO + PREFIXO + INFIXO + SUFIXO

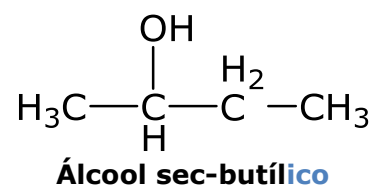
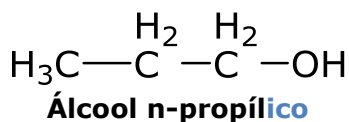
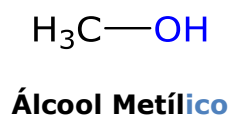
Exemplos:



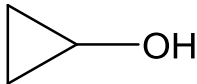
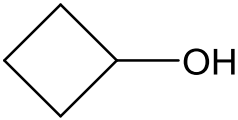
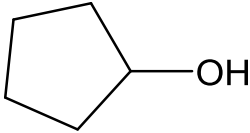
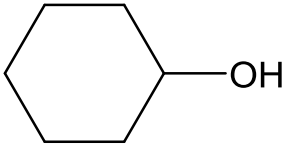
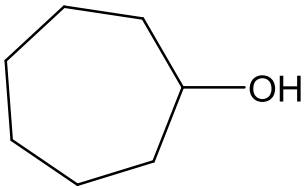
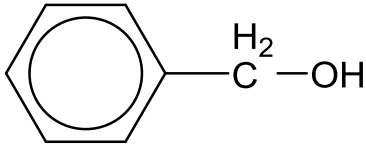
7. Regra de nomenclatura clássica

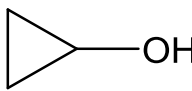
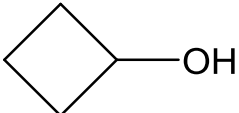
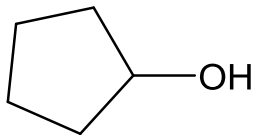
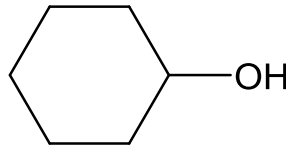
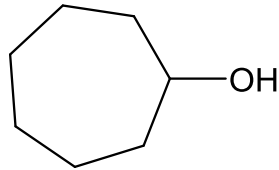
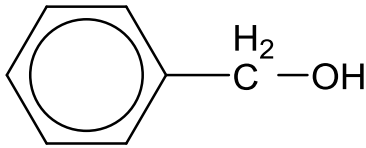
ÁLCOOL RADICAL + ICO

Exemplos:



Dê os nomes dos seguintes compostos orgânicos:

$\text{H}_3\text{C}-\text{OH}$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\text{OH}$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$
$\text{H}_3\text{C}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$
$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\text{CH}_2}$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\text{CH}_3$
$\text{HO}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$	$\overset{\text{OH}}{\text{H}_2\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\overset{\text{OH}}{\text{CH}_2}$	$\overset{\text{OH}}{\text{H}_2\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$
$\text{H}_3\text{C}-\overset{\text{OH}}{\underset{\text{CH}_3}{\text{C}}}-\text{CH}_3$	$\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$	$\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$
$\text{H}_2\text{C}=\overset{\text{H}_2}{\underset{\text{H}}{\text{C}}}-\text{C}-\text{OH}$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}=\overset{\text{H}_2}{\text{C}}-\text{C}-\text{OH}$	$\text{HC}\equiv\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$
$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$	$\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$
		
		

$\text{H}_3\text{C}-\text{OH}$ <p>Metanol ou Álcool Metílico</p>	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>Etanol ou Álcool Etilico</p>	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>1-Propanol ou Propan-1-ol ou Álcool N-Propílico</p>
$\begin{array}{c} \text{OH} \\ \\ \text{H}_3\text{C}-\text{C}-\text{CH}_3 \\ \\ \text{H} \end{array}$ <p>2-Propanol ou Propan-2-ol ou Álcool Isopropílico</p>	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>1-Butanol ou Butan-1-ol ou Álcool N-Butílico</p>	$\begin{array}{c} \text{OH} \\ \\ \text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\text{C}-\text{CH}_3 \\ \\ \text{H} \end{array}$ <p>2-Butanol ou Butan-2-ol ou Álcool Sec-Butílico</p>
$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\text{CH}_2}$ <p>1-Pentanol ou Pentan-1-ol ou Álcool N-Pentílico ou Álcool Amílico</p>	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$ <p>2-Pentanol ou Pentan-2-ol</p>	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\text{CH}_3$ <p>3-Pentanol ou Pentan-3-ol</p>
$\text{HO}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>Etanodiol ou Etilenoglicol ou Etan-1,2-diol</p>	$\begin{array}{c} \text{OH} \quad \text{OH} \quad \text{OH} \\ \quad \quad \\ \text{H}_2\text{C}-\text{C}-\text{CH}_2 \\ \\ \text{H} \end{array}$ <p>Propanotriol ou 1,2,3-Propanotriol ou Propan-1,2,3-triol ou Glicerol</p>	$\begin{array}{c} \text{OH} \quad \text{OH} \\ \quad \\ \text{H}_2\text{C}-\text{C}-\text{CH}_3 \\ \\ \text{H} \end{array}$ <p>1,2-Propanodiol ou Propan-1,2-diol</p>
$\begin{array}{c} \text{OH} \\ \\ \text{H}_3\text{C}-\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$ <p>Metilpropan-2-ol ou 2-Metil-2-Propanol ou Álcool Terc-Butílico</p>	$\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>Metilpropan-1-ol ou 2-Metil-1-Propanol ou Metilpropanol ou Álcool Isobutílico</p>	$\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>3-Metil-1-Butanol ou 3-Metilbutan-1-ol ou Álcool Isopentílico ou Álcool Isoamílico</p>
$\text{H}_2\text{C}=\overset{\text{H}_2}{\underset{\text{H}}{\text{C}}}-\text{C}-\text{OH}$ <p>Prop-2-en-1-ol ou 2-Propenol</p>	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}=\overset{\text{H}_2}{\text{C}}-\text{C}-\text{OH}$ <p>But-2-en-1-ol ou 2-Butenol</p>	$\text{HC}\equiv\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>But-3-in-1-ol ou 3-Butinol</p>
$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\text{OH}$ <p>2-Metilbutan-1-ol ou 2-Metil-1-butanol ou 2-Metilbutanol</p>	$\text{H}_3\text{C}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$ <p>2-metilpentan-3-ol ou 2-metil-3-pentanol</p>	$\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}}-\overset{\text{H}_2}{\text{C}}-\overset{\text{OH}}{\underset{\text{H}}{\text{C}}}-\text{CH}_3$ <p>4-metilpentan-2-ol ou 4-metilpentanol</p>
 <p>Ciclopropanol</p>	 <p>Ciclobutanol</p>	 <p>Ciclopentanol</p>
 <p>Ciclo-hexanol</p>	 <p>Ciclo-heptanol</p>	 <p>Fenilmetanol ou Álcool Benzílico</p>