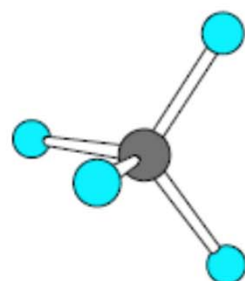
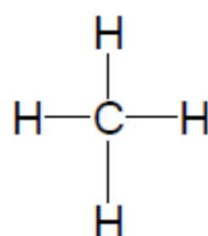


Alcani Formula Generale $C_nH_{(2n+2)}$

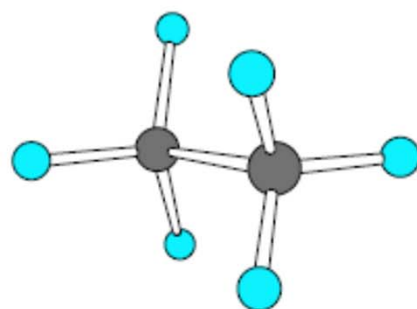
Idrocarburi saturi a catena aperta contenenti solo legami singoli C-C.
Il carbonio è ibridato sp^3



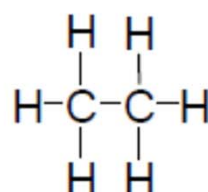
CH₄



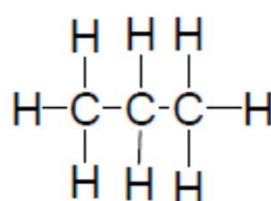
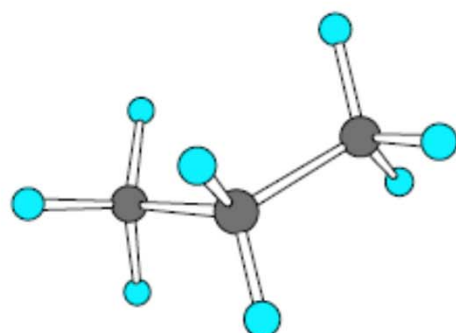
metano



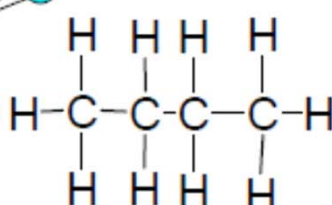
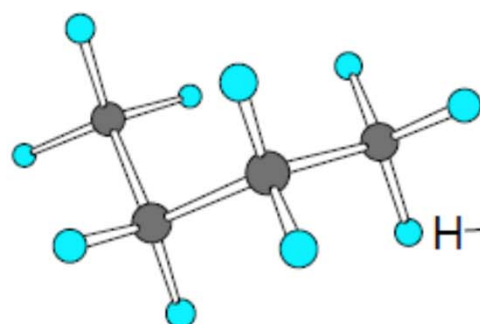
H₃C-CH₃



etano



H₃C-CH₂-CH₃
propano



H₃C-CH₂-CH₂-CH₃
butano

Nomenclatura degli alcani

La nomenclatura internazionale per tutti i composti organici è definita dalla **IUPAC** (International Union of Pure and Applied Chemistry)

Gli alcani sono caratterizzati dalla desinenza **-ano**

Il **prefisso** indica il numero di atomi di carbonio del composto

Alcani lineari

1 C	metano	CH_4
2 C	etano	CH_3CH_3
3 C	propano	$\text{CH}_3\text{CH}_2\text{CH}_3$
4 C	butano	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$
5 C	pentano	$\text{CH}_3(\text{CH}_2)_3\text{CH}_3$
6 C	esano	$\text{CH}_3(\text{CH}_2)_4\text{CH}_3$
7 C	eptano	$\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
10 C	decano	$\text{CH}_3(\text{CH}_2)_8\text{CH}_3$
11 C	undecano	$\text{CH}_3(\text{CH}_2)_9\text{CH}_3$
12 C	dodecano	$\text{CH}_3(\text{CH}_2)_{10}\text{CH}_3$
13 C	tridecano	$\text{CH}_3(\text{CH}_2)_{11}\text{CH}_3$
20 C	eicosano	$\text{CH}_3(\text{CH}_2)_{18}\text{CH}_3$
30 C	triacontano	$\text{CH}_3(\text{CH}_2)_{28}\text{CH}_3$
100 C	ectano	$\text{CH}_3(\text{CH}_2)_{98}\text{CH}_3$

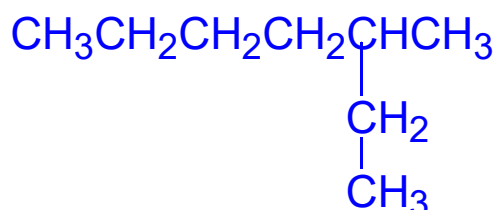
Nomenclatura dei gruppi alchilici (alifatici) lineari

Dall'alcano lineare si sostituisce la desinenza **-ano** con **-ile**

Metano	$\text{CH}_3\text{-H}$	Metile	-CH_3
Etano	$\text{CH}_3\text{CH}_2\text{-H}$	Etile	$\text{-CH}_2\text{CH}_3$
Propano	$\text{CH}_3\text{CH}_2\text{CH}_2\text{-H}$	Propile	$\text{-CH}_2\text{CH}_2\text{CH}_3$
Butano	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$	Butile	$\text{-CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$

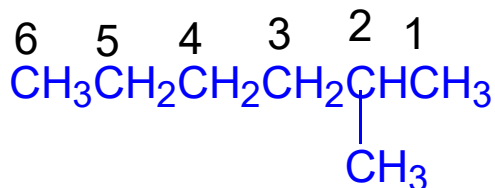
Nomenclatura degli alcani ramificati

1) si scrive la catena "lineare" più lunga di atomi di carbonio del composto, che determinerà il nome base dell'alcano

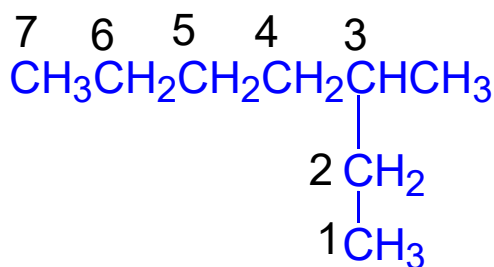


non è un etilesano
ma un **metileptano**

2) si numera la "catena più lunga" in modo che il sostituito abbia il numero d'ordine più basso



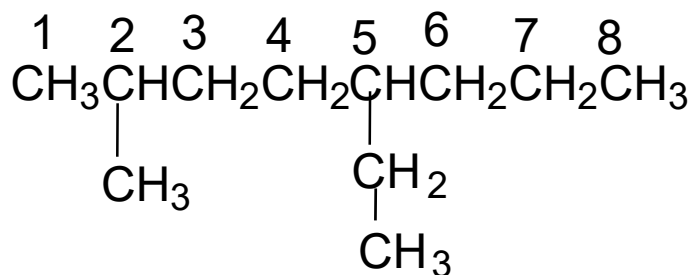
2-metilesano



3-metileptano

Nomenclatura degli alcani ramificati

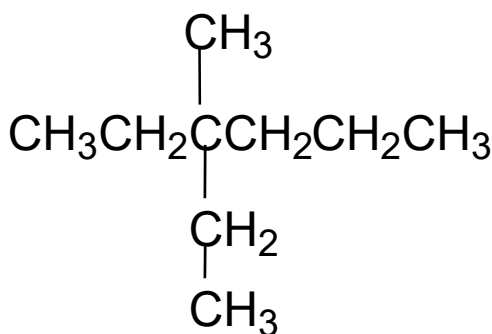
3) se sono presenti più sostituenti si individua la loro posizione dal numero dell'atomo di carbonio facendo in modo da dare loro il numero d'ordine più basso



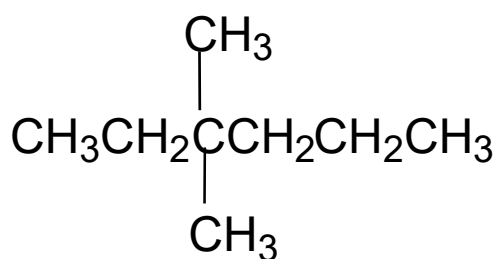
5-etil-2-metil-ottano

non 4-etil-7-metil-ottano

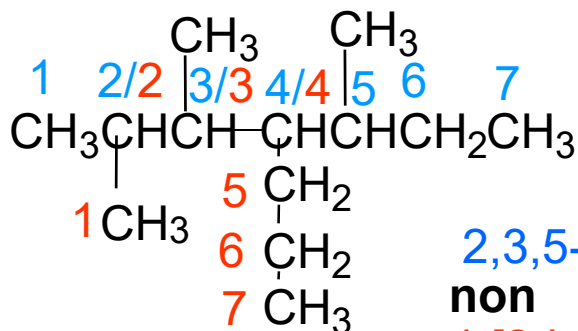
l'etil precede il metil in base all'ordine alfabetico



3-etil-3-metil-esano



3,3-dimetil-esano

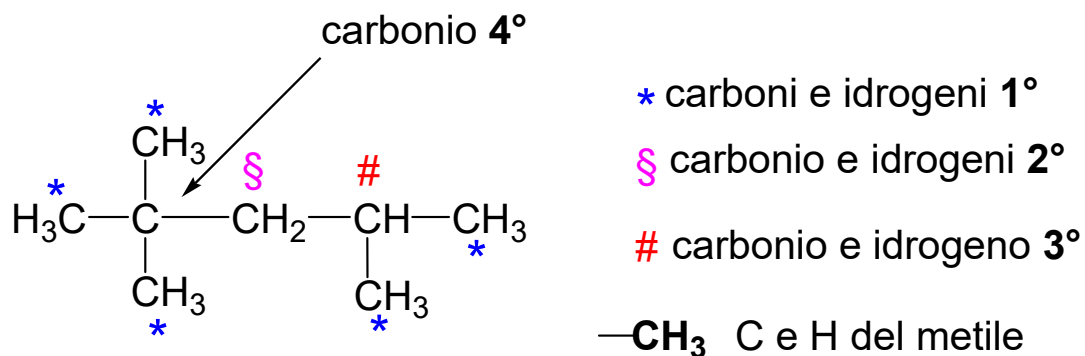


2,3,5-trimetil-4-propil-eptano (4 sost.)

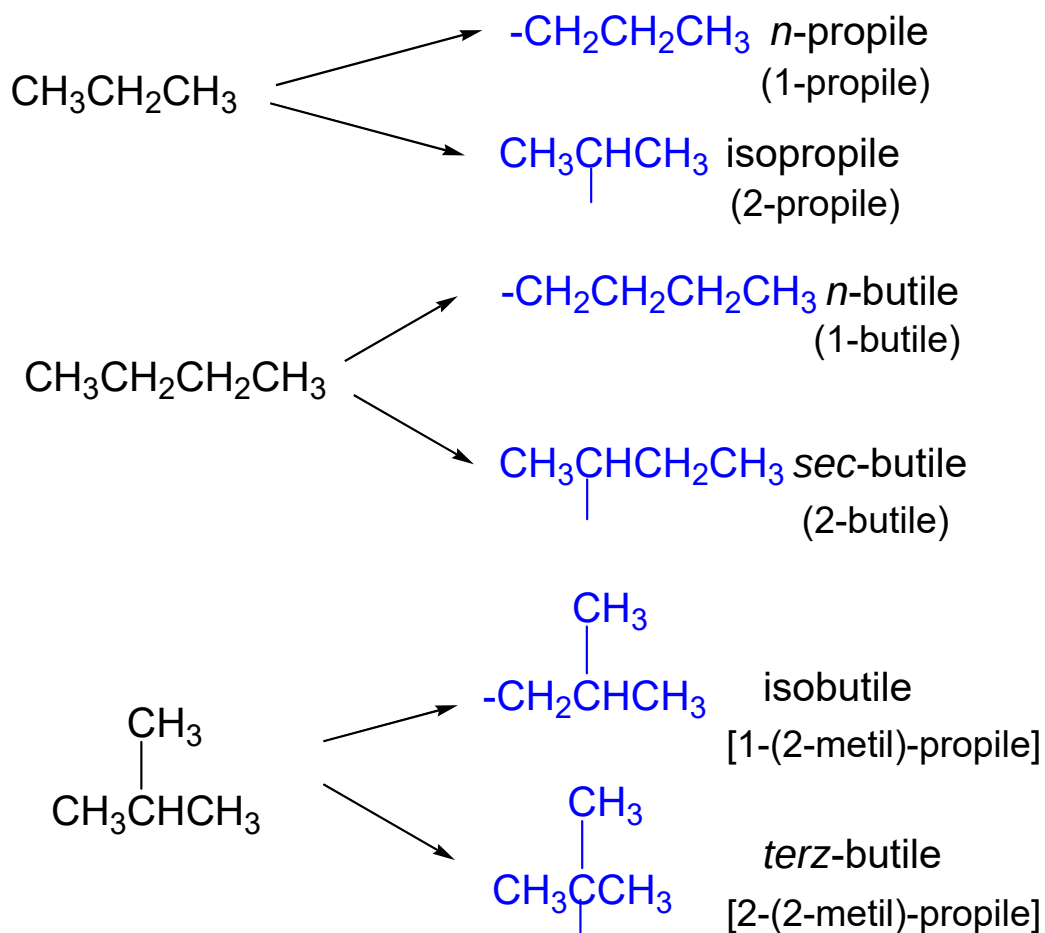
non

4-[2-butil]-2,3-dimetil-eptano (3 sost.) 4

Classificazione degli atomi di C e di H

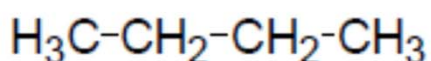
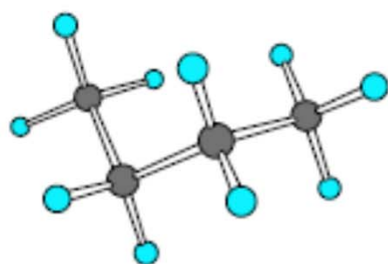


Nomenclatura gruppi alchilici ramificati

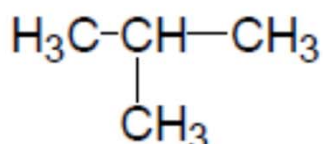
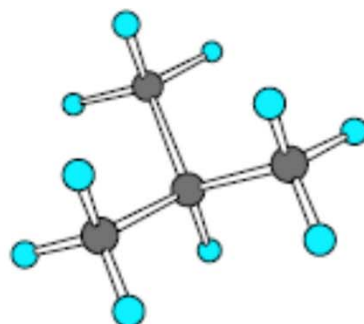


Isomeria costituzionale negli alcani

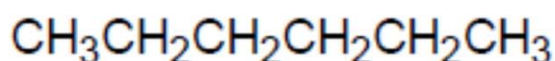
Isomeri costituzionali = composti con uguale formula molecolare ma nei quali gli atomi sono legati con un ordine diverso



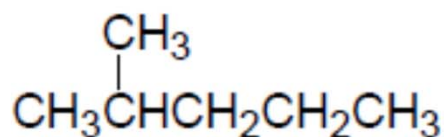
butano



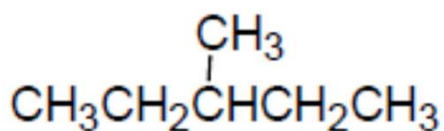
2-metilpropano



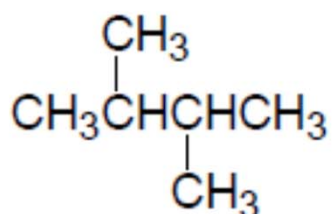
n-esano



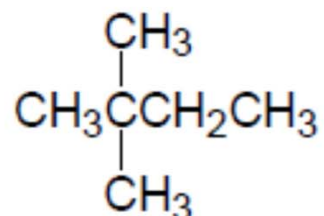
2-metilpentano



3-metilpentano



2,3-dimetilbutano



2,2-dimetilbutano

NUMERO DI ISOMERI AL VARIARE DEI CARBONI

FORMULA	Isomeri	FORMULA	Isomeri
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CH ₄	1	C ₇ H ₁₆	9
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C ₂ H ₆	1	C ₈ H ₁₈	18
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C ₃ H ₈	1	C ₉ H ₂₀	35
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C ₄ H ₁₀	2	C ₁₀ H ₂₂	75
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C ₅ H ₁₂	3	C ₂₀ H ₄₂	366319
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C ₆ H ₁₄	5	C ₃₀ H ₆₂	411. 10 ⁷
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