Nomenklatur von Kohlenwasserstoffen

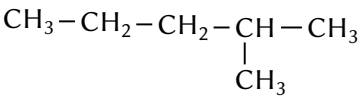
Übungen

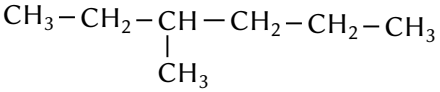
1. Unverzweigte Alkane
Geben Sie die Strukturformeln von Methan bis Decan der homologen Reihe an.

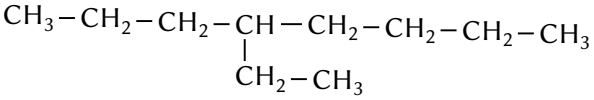
2. Einfach verweigte Alkane I
Geben Sie die Strukturformeln folgender Alkane an.

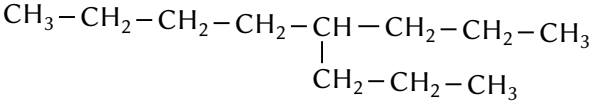
a) 2-Methylbutan b) 3-Ethylhexan c) 4-Propylheptan d) 5-Butylnonan

3. Einfach verzweigte Alkane II
Benennen Sie folgende Moleküle.

a) 

b) 

c) 

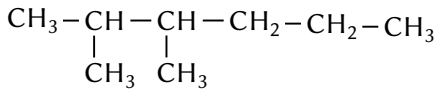
d) 

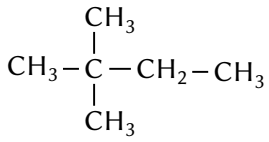
4. Mehrfach verzweigte Alkane I
Geben Sie die Strukturformeln folgender Alkane an.

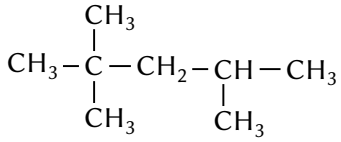
a) 2,2-Dimethylbutan
b) 2,4-Dimethylhexan
c) 3-Ethyl-3-methylpentan
d) 3,3,5-Trimethylheptan
e) 5-Butyl-4,4-diethyl-2,7-dimethylnonan

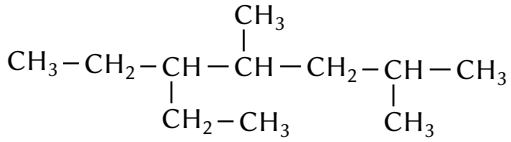
5. Mehrfach verzweigte Alkane II

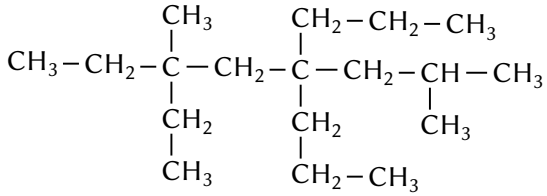
Benennen Sie folgende Moleküle.

a) 

b) 

c) 

d) 

e) 

6. Alkene I

Geben Sie die Strukturformeln folgender Alkene an.

a) Propen

b) 2-Penten

c) 1,3-Butadien

d) 2,4-Heptadien

e) 1,3,5-Heptatrien

7. Alkene II

Benennen Sie folgende Moleküle.

a) $CH_2{=}CH_2$

b) $CH_3{-}CH{=}CH{-}CH_3$

c) $CH_2{=}CH{-}CH{=}CH{-}CH_3$

d) $CH_2{=}CH{-}CH_2{-}CH{=}CH_2$

e) $CH_3{=}C{=}CH{-}CH_2{-}CH{=}CH_2$

8. Kohlenwasserstoffe I

Geben Sie die Strukturformeln folgender Moleküle an.

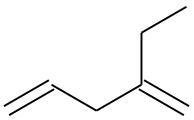
a) 3,3-Dimethylpent-1-en

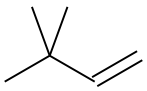
b) 7-Ethyl-2,3-dimethyl-4-propyl-3,5-nonadien

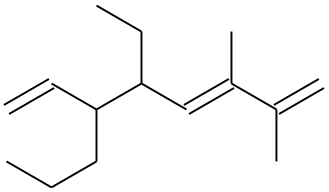
c) 5-Ethyl-2,4-dimethyl-6-propyl-2,4,7-nonatrien

9. Kohlenwasserstoffe II

Benennen Sie folgende Moleküle.

a) 

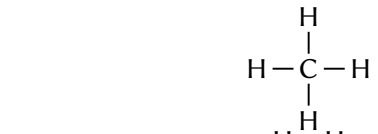
b) 

c) 

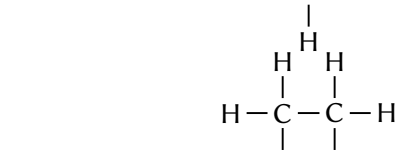
Lösungen

1. Unverzweigte Alkane

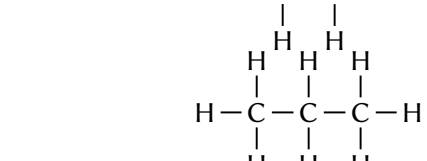
Methan



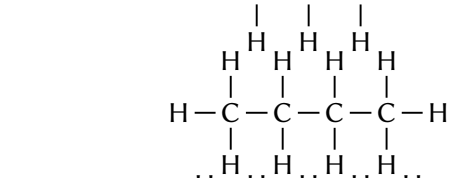
Ethan



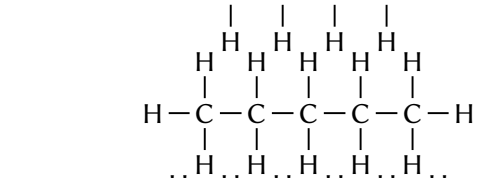
Propan



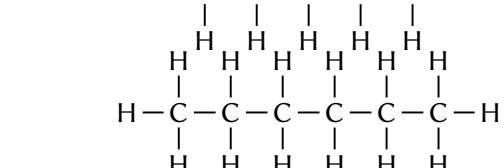
Butan



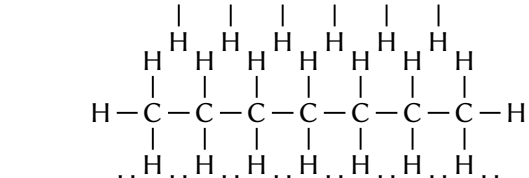
Pentan



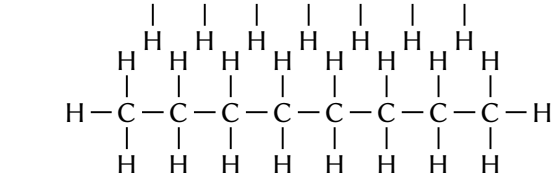
Hexan



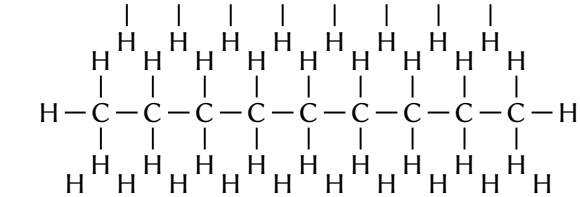
Heptan



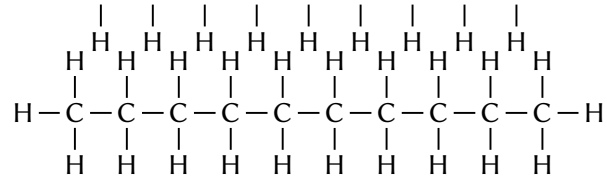
Octan



Nonan

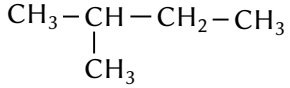


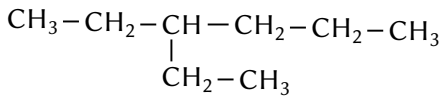
Decan

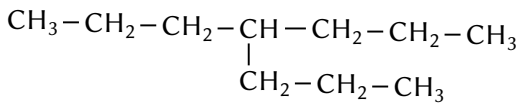


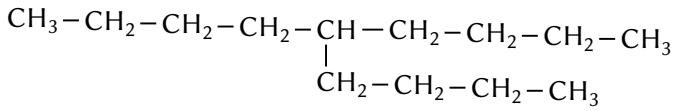
2. Einfach verweigte Alkane I

a)



b) 

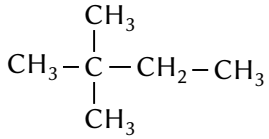
c) 

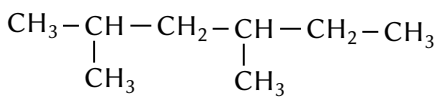
d) 

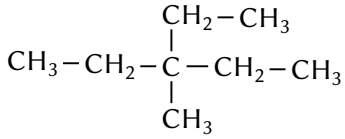
3. Einfach verzweigte Alkane II

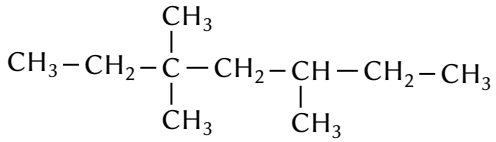
a) 2-Methylpentan b) 3-Methylhexan c) 4-Ethyloctan d) 4-Propyloctan

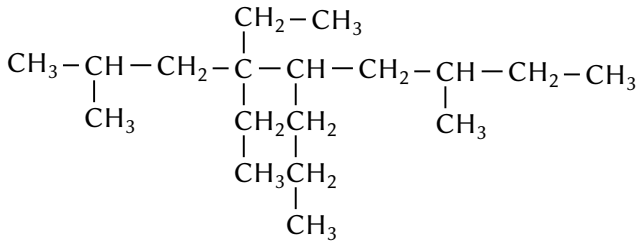
4. Mehrfach verzweigte Alkane I

a) 

b) 

c) 

d) 

e) 

5. Mehrfach verzweigte Alkane II

a) 2,3-Dimethylhexan

b) 2,2-Dimethylbutan

c) 2,2,4-Trimethylpentan

d) 5-Ethyl-2,4-dimethylheptan

e) 6-Ethyl-2,6-dimethyl-4,4-dipropyloctan

6. Alkene I

a) $CH_2=CH-CH_3$

b) $CH_3-CH_2-CH=CH-CH_3$

c) $CH_3-CH=CH-CH=CH-CH_2-CH_3$

d) $CH_3-CH=CH-CH=CH-CH=CH_2$

7. Alkene II

a) Ethen

b) 2-Buten

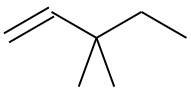
c) 1,3-Pentadien

d) 1,4-Pentadien

e) 1,2,5-Hexatrien

8. Kohlenwasserstoffe I

a)



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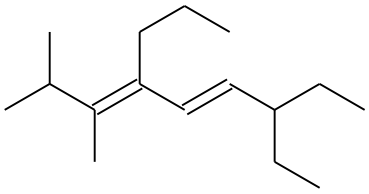
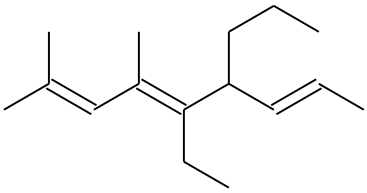


c)



9. Kohlenwasserstoffe II

a) 2-Ethyl-1,4-pentadien

b) 3,3-Dimethyl-1-buten

c) 5-Ethyl-2,3-dimethyl-6-propyl-1,3,7-octatrien