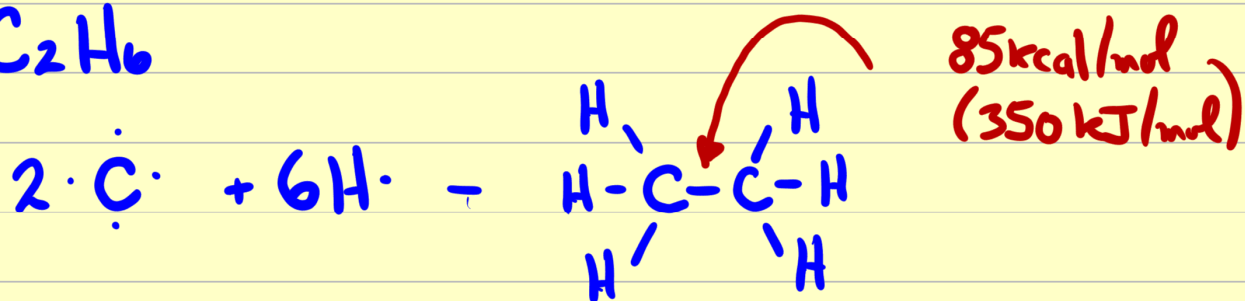


BONDING.

- ALL OF sp^3 , sp^2 , sp POSSIBLE
- RESPONDS TO ATOMS PRESENT TO MAKE MOST STABLE COMPOUND.

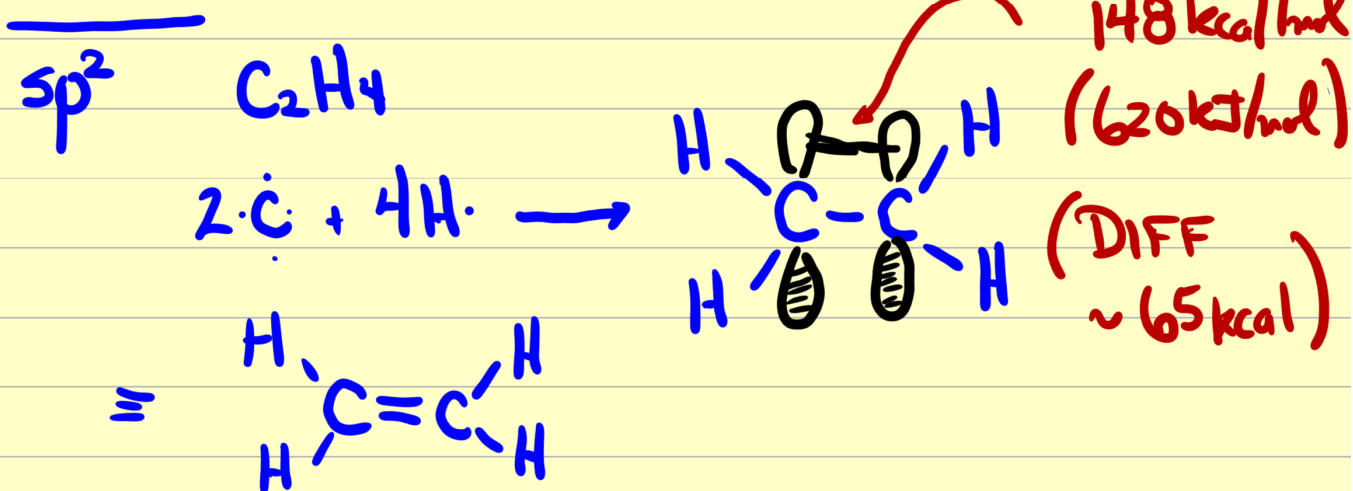
C_2H_6



4 σ BONDS FOR CARBON - sp^3 HYBRIDIZED.

CH_4 , C_3H_8 , C_4H_{10}

$C_n H_{2n+2}$

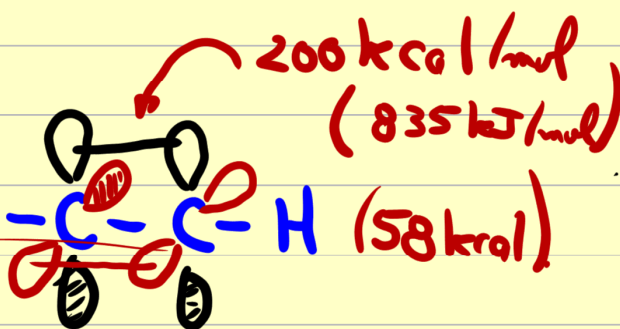
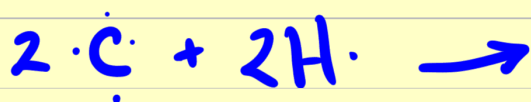


EACH C HAS 3 σ BONDS, 1 π BOND.
 - DOUBLE BOND IS COMPRISED OF 1 σ , 1 π BOND.

APPLIES TO C₃H₆, C₄H₈, C₅H₁₀
 (C_nH_{2n})

sp HYBRIDIZATION

C₂H₂



TRIPLE BOND COMPRISED OF 1 σ } BONDS
 2 π }

To be consistent, the carbon atom has two sigma bonds and two pi bonds

APPLIES TO C₂H₂, C₃H₄, C₄H₆, C₅H₈.....
 C_nH_{2n-2}

CH 2 HYDROCARBONS.

- ONLY HAVE CARBON AND HYDROGEN ATOMS.

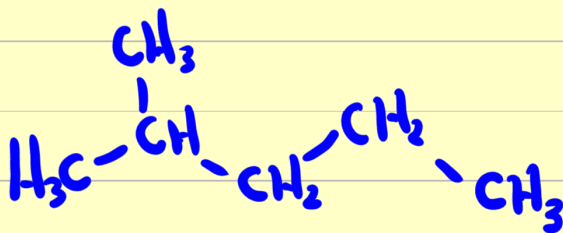
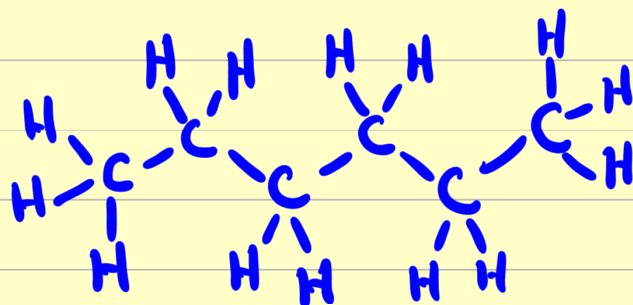
THREE TYPES

ALKANES, ALKENES, ALKYNES (ARENES)

arenes (benzenes) for this purpose (only) can be considered as a type of alkene

1. ALKANES.

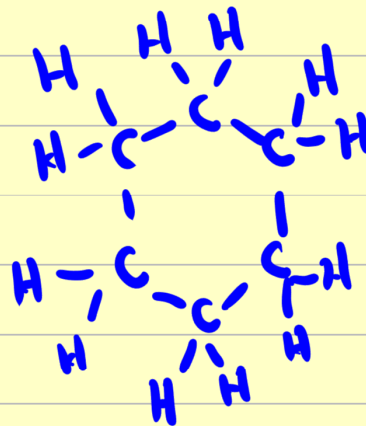
- ONLY SINGLE BONDS



ALSO CALLED

- SATURATED

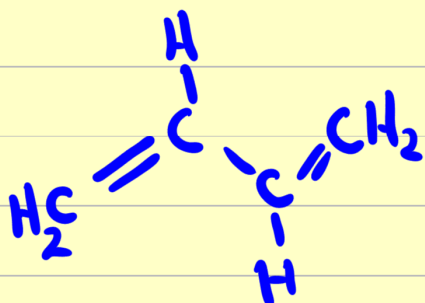
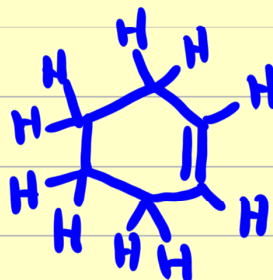
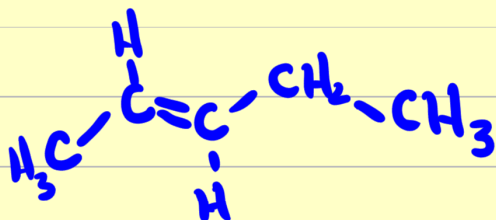
HYDROCARBONS.



- ALL C'S SP³ HYBRIDIZED

2) ALKENES

- AT LEAST ONE C=C



AT LEAST TWO C'S
ARE sp^2

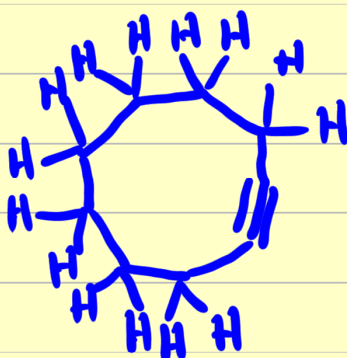
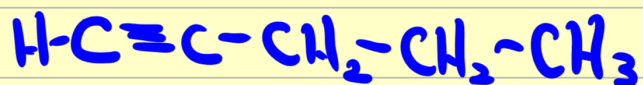
SYNONYM = OLEFIN

That's synonym

ALKENES & ALKYNES ARE CALLED
UNSATURATED.

3) ALKYNES

- AT LEAST 1 C \equiv C TRIPLE BOND



CYCLIC, BUT ONLY IF
IF RING \geq 8 CARBONS

AT LEAST 2 C'S ARE sp

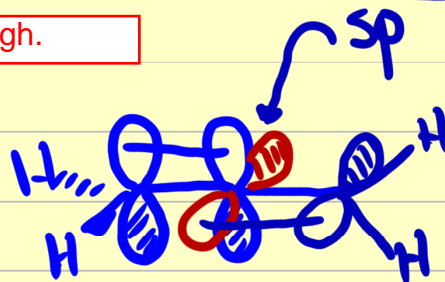
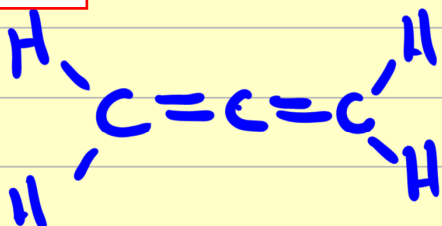
- OLDER NAME = ACETYLENES

ARE sp HYBRID CARBONS IN ALKYNES?
ONLY

No.

It is >90% of the cases, though.

The exception..



These are called allenes or cumulenes; they are a type of alkene