

15. Alkynes

Alkynes

- General formula is C_nH_{2n-2}
- They are named as the corresponding alkanes replacing 'ane' by the suffix 'yne'.
- Each carbon atom of ethyne has two *sp* hybridised orbitals.
- **Preparation of Ethynes**
 - From calcium carbide (CaC_2)
 - From vicinal dihalides
- **Properties**
 - Colourless, odourless, weakly polar
 - Immiscible in water
 - Hydrogen attached to triply bonded carbon atom is acidic
 - Undergoes addition reactions
 - Addition of dihydrogen
 - Addition of halogens
 - Addition of hydrogen halides (HX ; $X = Cl, Br, I$)
 - Addition of water
 - Undergoes linear and cyclic polymerisation
 - Shows oxidation reaction
 - Undergoes ozonolysis to produce ozonides
- **Uses:**
 - Oxy-acetylene welding at very high temperatures
 - Illuminant in oxy-acetylene lamp
 - Ripening and preservation of fruits
 - Manufacture of several products like polymers. artificial rubber, oxalic acid, acetaldehyde, acetic acid, etc.

