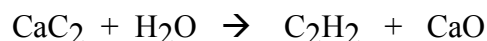


Alkyne and Diene Reaction Summary

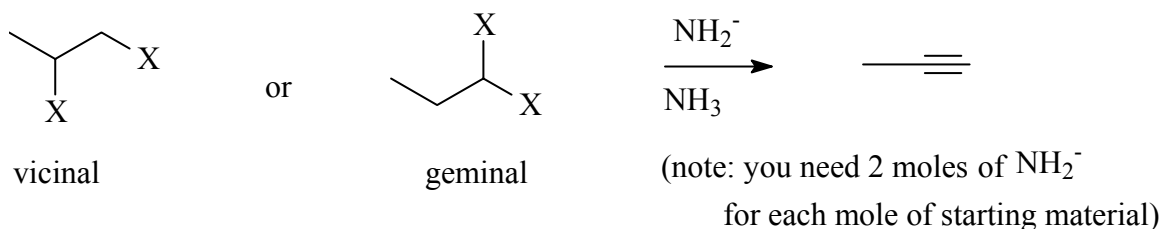
Preparation

1) Inorganic – Calcium carbide (CaC_2) plus water to make acetylene (ethyne) and calcium oxide



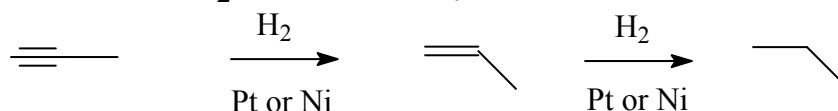
2) Dehydrohalogenation of a dihaloalkyl halide – you need a stronger base than OH^-

Most common “superstrong” base is the amide ion, NH_2^-

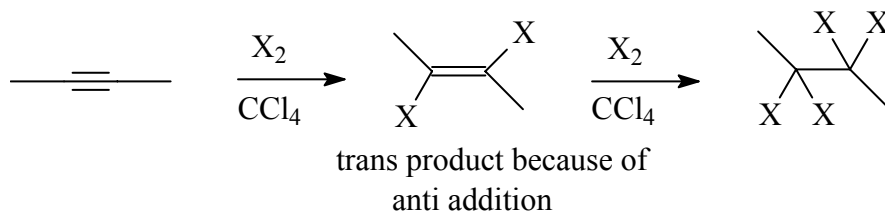


Reactions

1) Hydrogenation – excess H_2 with Pt or Ni catalyst will react with both π bonds



2) Halogenation – same as with hydrogenation: excess X_2 will react with both π bonds

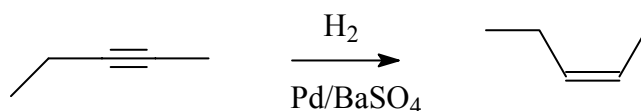


3) Partial hydrogenation – H_2 with a catalyst that has been “poisoned” (partially deactivated)

3 choices: 1) H_2 with Pd/ BaSO_4 (Lindlar’s catalyst)

2) H_2 with “P-2”

*** these two are **syn additions** that give a **cis product** ***



3) Li or Na in NH_3 *** this is **anti addition** that gives a **trans product** ***

