

Haloalkanes & Halobenzenes 07

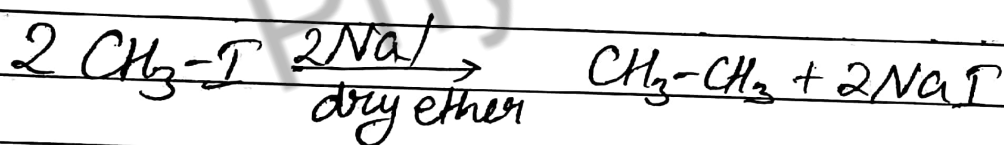
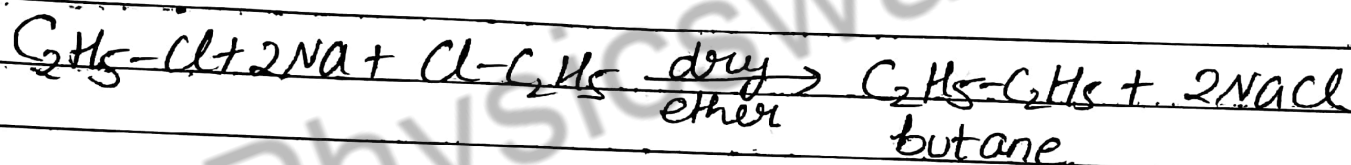
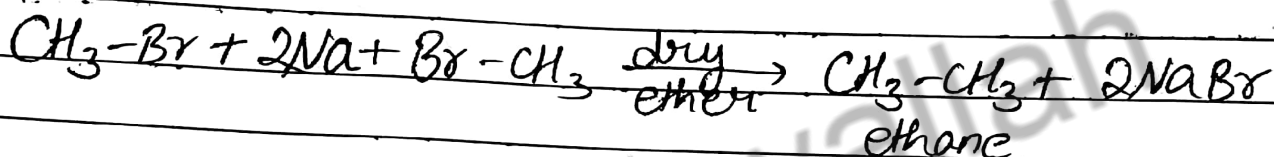
Properties of Haloalkanes 4

Reaction with Metals

(i) with Sodium (Na) — Wurtz Reaction

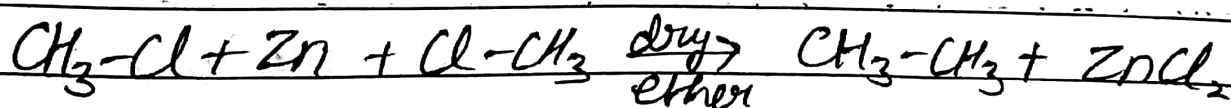


Ascent of chain

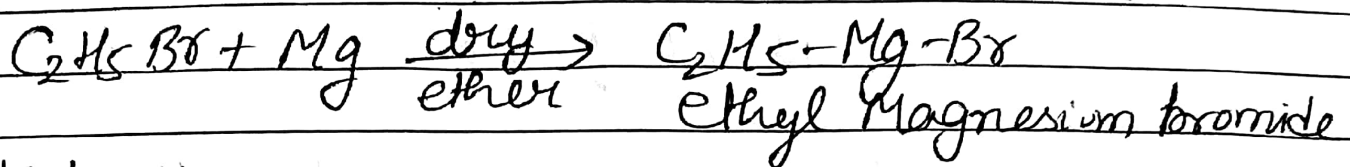
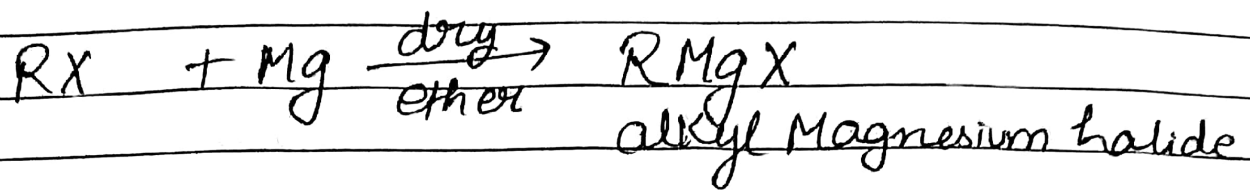


for Complete Mechanism & More questions See
Wurtz Reaction Video - PhysicsWallah
Hydrocarbons 02 - PhysicsWallah Class 11th

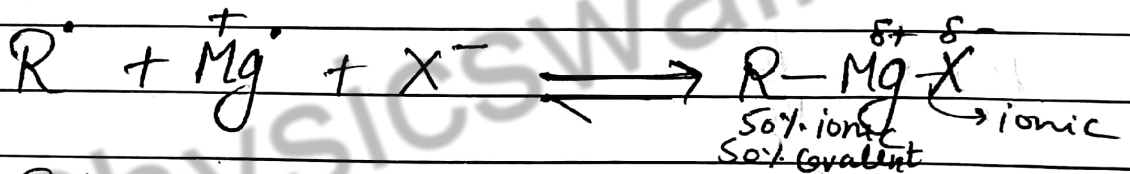
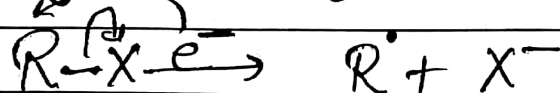
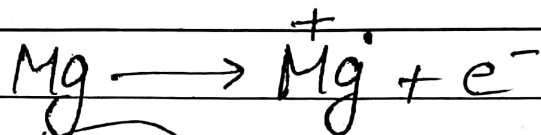
with Zinc (Zn) — Frankland Reaction



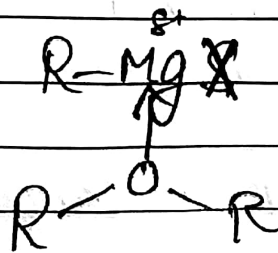
(iii) with Magnesium (Mg) \rightarrow Formation of Grignard's Reagent.



Mechanism

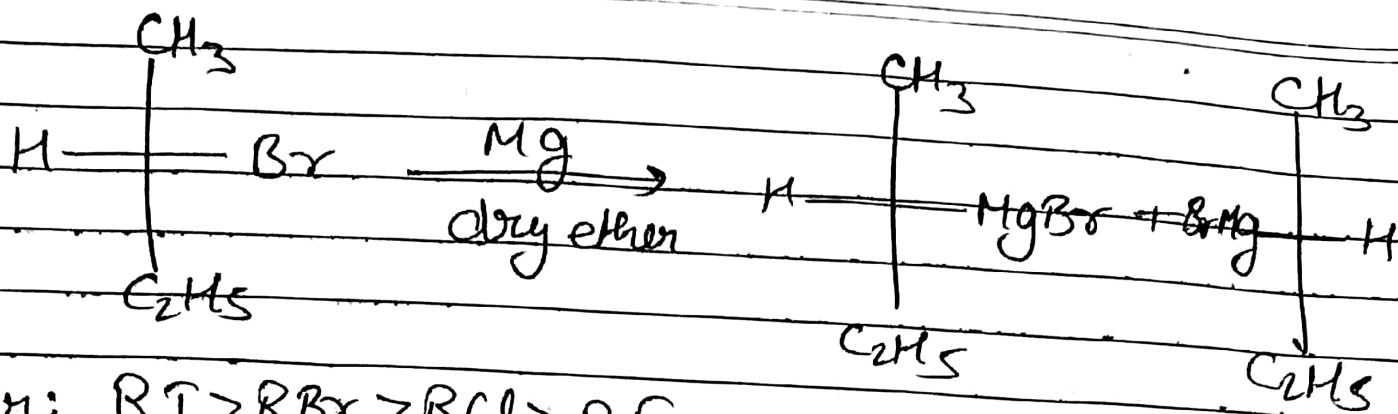


Role of dry ether: prevents backward reaction



ether solvates $R-MgX$ & stabilises it which shifts reaction forward.

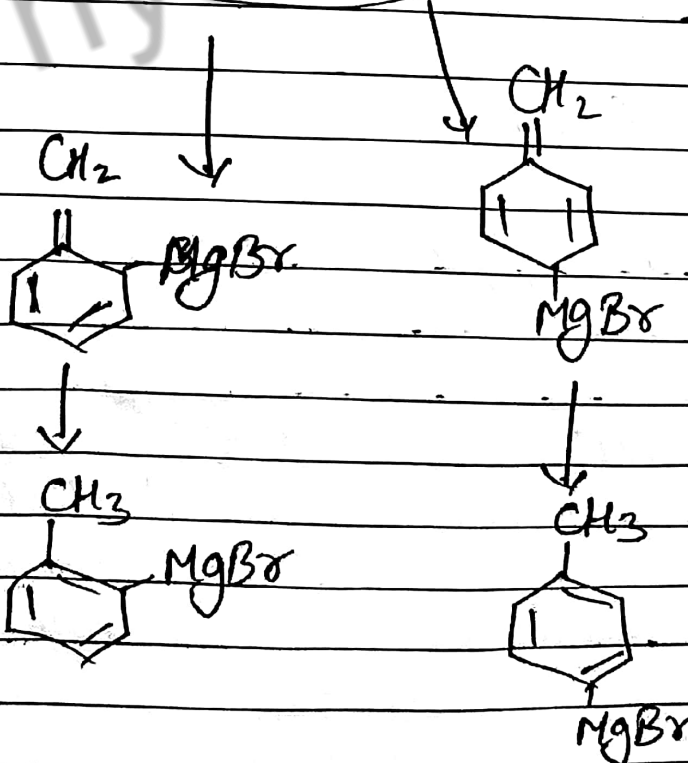
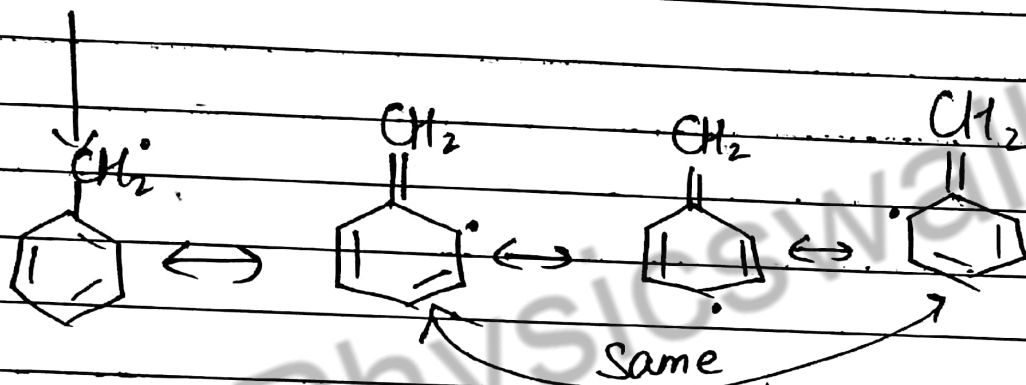
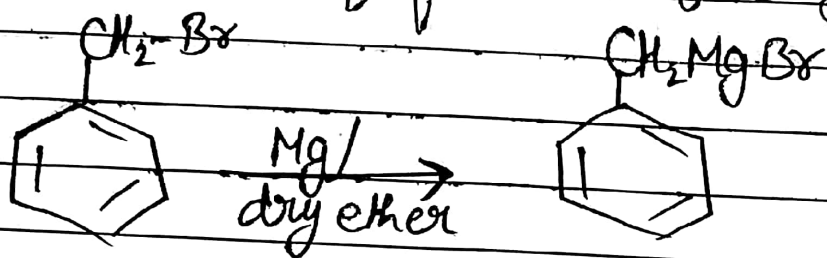
Note: R^\cdot is a free radical $\rightarrow sp^2$ hybridised so attack of MgX can occur from both sides in case of chiral centres



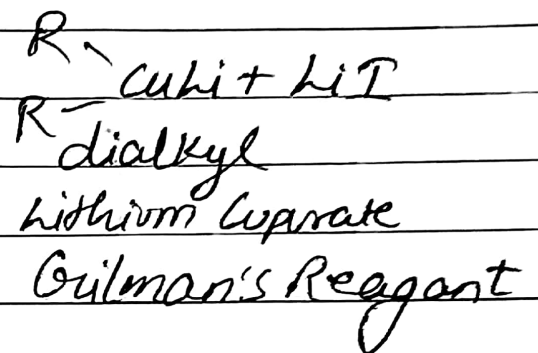
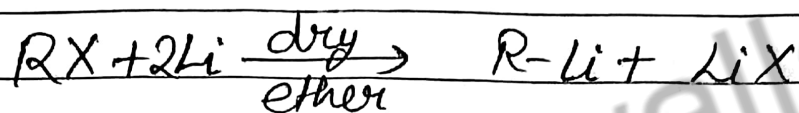
Order: $\text{RI} > \text{RBr} > \text{RCl} > \text{RF}$

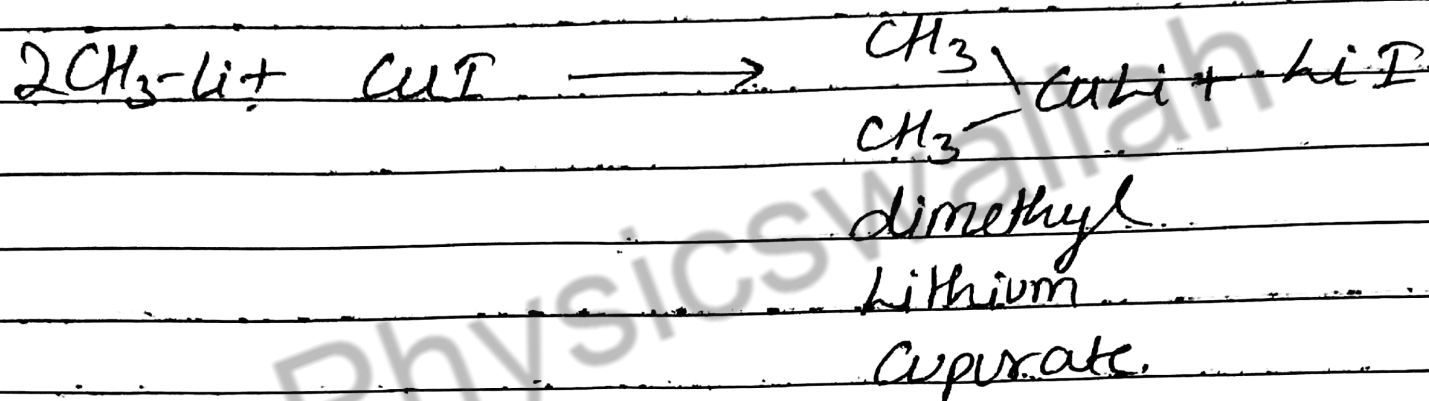
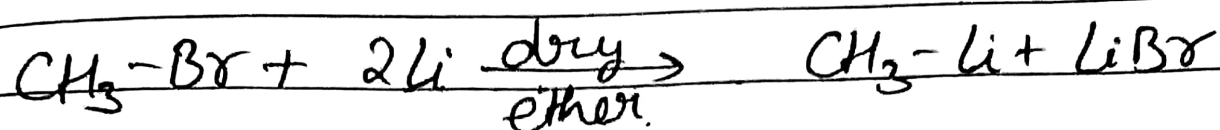
Rate of formation of RMgX

Racemic Mixture



(iv) with Lithium (Li)





used in Corey house synthesis of alkanes

"Watch hydrocarbons of physics Wallah for Corey house synthesis"