

class - B.Sc. Part I (Honours)

Subject - chemistry

Paper - IC

Topic - organometallic compound of my
(Grignard reagent)

Name - Dr. Rashmi Sinha

Dept. of chemistry

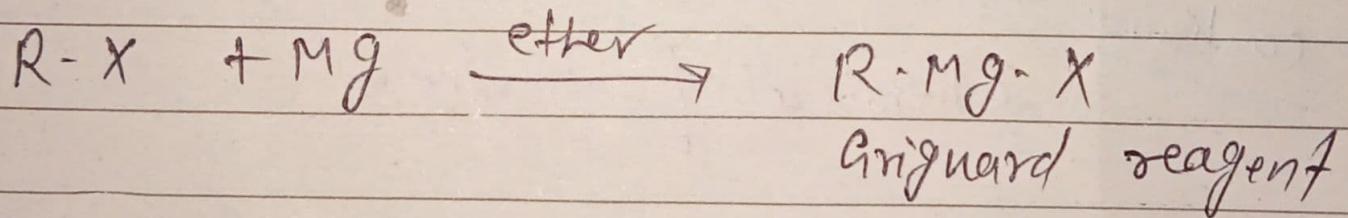
H. D. Jain college.

Grignard reagent

Alkyl magnesium halide is known as Grignard reagent. It is an organomagnesium compound which can be represented by the chemical formula "R-Mg-X". where R represented to an alkyl or aryl gr and X refers to a halogen.

These reagents were discovered by the French chemist Victor Grignard.

Preparation ! - Grignard reagents are prepared by the action of dry magnesium on dry alkyl or aryl halide in presence of ether.



Procedure ! - Pure and dry alkyl halide and magnesium (calculated amount) are taken in a round bottom flask

(2)

heated with reflex condenser. Ether is also taken in the flask which sets a solvent.

The top of condenser is fitted with anhydrous CaCl_2 tube so that, the apparatus is completely free from moisture. When the reaction starts magnesium are dissolved and ~~ethereal~~ ethereal solution of Grignard reagent (alkyl magnesium halide) is obtained.

Limitations of reaction

Grignard reagent can not be prepared from such alkyl halides which contain groups with which it is known to react. Thus only few groups like $-R$, $-OR$, $-X$ may be present in alkyl halide from which Grignard reagent is to be prepared. Alkyl halide, containing groups like $-COOH$, $-OH$, $-NH_2$, $\gamma C=O$, $-COOR$, $-NO_2$, $-SO_3H$ and the like can not form this reagent.